WEALE'S SERIES
OF
SCIENTIFIC AND TECHNICAL WORKS.

"It is not too much to say that no books have ever proved more popular with or more useful to young engineers and others than the excellent treatises comprised in WEALE'S SERIES."—**Engineer.**

A New Classified List.

	PAGE		PAGE
CIVIL ENGINEERING AND SURVEYING	2	ARCHITECTURE AND BUILDING . .	6
MINING AND METALLURGY	3	INDUSTRIAL AND USEFUL ARTS. .	9
MECHANICAL ENGINEERING	4	AGRICULTURE, GARDENING, ETC. .	10
NAVIGATION, SHIPBUILDING, ETC. .	5	MATHEMATICS, ARITHMETIC, ETC. .	12

BOOKS OF REFERENCE AND MISCELLANEOUS VOLUMES . . 14

Capio Lumen

CROSBY LOCKWOOD AND SON,
7, STATIONERS' HALL COURT, LONDON, E.C.
1900.

CIVIL ENGINEERING & SURVEYING.

Civil Engineering.
By HENRY LAW, M.Inst.C.E. Including a Treatise on HYDRAULIC ENGINEERING by G. R. BURNELL, M.I.C.E. Seventh Edition, revised, with LARGE ADDITIONS by D. K. CLARK, M.I.C.E. . . . 6/6

Pioneer Engineering:
A Treatise on the Engineering Operations connected with the Settlement of Waste Lands in New Countries. By EDWARD DOBSON, M.INST.C.E. With numerous Plates. Second Edition 4/6

Iron Bridges of Moderate Span:
Their Construction and Erection. By HAMILTON W. PENDRED. With 40 Illustrations 2/0

Iron and Steel Bridges and Viaducts.
A Practical Treatise upon their Construction for the use of Engineers, Draughtsmen, and Students. By FRANCIS CAMPIN, C.E. With numerous Illustrations 3/6

Constructional Iron and Steel Work,
As applied to Public, Private, and Domestic Buildings. By FRANCIS CAMPIN, C.E. 3/6

Tubular and other Iron Girder Bridges.
Describing the Britannia and Conway Tubular Bridges. By G. DRYSDALE DEMPSEY, C.E. Fourth Edition 2/0

Materials and Construction:
A Theoretical and Practical Treatise on the Strains, Designing, and Erection of Works of Construction. By FRANCIS CAMPIN, C.E. . . 3/0

Sanitary Work in the Smaller Towns and in Villages.
By CHARLES SLAGG, Assoc. M.Inst.C.E. Third Edition . . . 3/0

Roads and Streets (The Construction of).
In Two Parts: I. THE ART OF CONSTRUCTING COMMON ROADS, by H. LAW, C.E., Revised by D. K. CLARK, C.E.; II. RECENT PRACTICE: Including Pavements of Wood, Asphalte, &c. By D. K. CLARK, C.E. 4/6

Gas Works (The Construction of),
And the Manufacture and Distribution of Coal Gas. By S. HUGHES, C.E. Re-written by WILLIAM RICHARDS, C.E. Eighth Edition . . . 5/6

Water Works
For the Supply of Cities and Towns. With a Description of the Principal Geological Formations of England as influencing Supplies of Water. By SAMUEL HUGHES, F.G.S., C.E. Enlarged Edition 4/0

The Power of Water,
As applied to drive Flour Mills, and to give motion to Turbines and other Hydrostatic Engines. By JOSEPH GLYNN, F.R.S. New Edition . 2/0

Wells and Well-Sinking.
By JOHN GEO. SWINDELL, A.R.I.B.A., and G. R. BURNELL, C.E. Revised Edition. With a New Appendix on the Qualities of Water. Illustrated 2/0

The Drainage of Lands, Towns, and Buildings.
By G. D. DEMPSEY, C.E. Revised, with large Additions on Recent Practice, by D. K. CLARK, M.I.C.E. Third Edition 4/6

The Blasting and Quarrying of Stone,
For Building and other Purposes. With Remarks on the Blowing up of Bridges. By Gen. Sir J. BURGOYNE, K.C.B. 1/6

Foundations and Concrete Works.
With Practical Remarks on Footings, Planking, Sand, Concrete, Béton, Pile-driving, Caissons, and Cofferdams. By E. DOBSON, M.R.I.B.A. Eighth Edition 1/6

Pneumatics,
Including Acoustics and the Phenomena of Wind Currents, for the Use of Beginners. By CHARLES TOMLINSON, F.R.S. Fourth Edition . 1/6

Land and Engineering Surveying.
For Students and Practical Use. By T. BAKER, C.E. Eighteenth Edition, Revised and Extended by F. E. DIXON, A.M. Inst. C.E., Professional Associate of the Institution of Surveyors. With numerous Illustrations and two Lithographic Plates . . . . *[Just published* 2/0

Mensuration and Measuring.
For Students and Practical Use. With the Mensuration and Levelling of Land for the purposes of Modern Engineering. By T. BAKER, C.E. New Edition by E. NUGENT, C.E. 1/6

MINING AND METALLURGY.

Mineralogy,
Rudiments of. By A. RAMSAY, F.G.S. Fourth Edition, revised and enlarged. Woodcuts and Plates 3/6

Coal and Coal Mining,
A Rudimentary Treatise on. By the late Sir WARINGTON W. SMYTH, F.R.S. Eighth Edition, revised and extended by T. FORSTER BROWN. *[Just published* 3/6

Metallurgy of Iron.
Containing Methods of Assay, Analyses of Iron Ores, Processes of Manufacture of Iron and Steel, &c. By H. BAUERMAN, F.G.S. With numerous Illustrations. Sixth Edition, revised and enlarged 5/0

The Mineral Surveyor and Valuer's Complete Guide.
By W. LINTERN. Fourth Edition, with an Appendix on Magnetic and Angular Surveying 3/6

Slate and Slate Quarrying:
Scientific, Practical, and Commercial. By D. C. DAVIES, F.G.S. With numerous Illustrations and Folding Plates. Fourth Edition . . 3/0

A First Book of Mining and Quarrying.
With the Sciences connected therewith, for Primary Schools and Self Instruction. By J. H. COLLINS, F.G.S. Second Edition . . . 1/6

Subterraneous Surveying,
With and without the Magnetic Needle. By T. FENWICK and T. BAKER, C.E. Illustrated 2/6

Mining Tools.
Manual of. By WILLIAM MORGANS, Lecturer on Practical Mining at the Bristol School of Mines 2/6

Mining Tools, Atlas
Of Engravings to Illustrate the above, containing 235 Illustrations of Mining Tools, drawn to Scale. 4to 4/6

Physical Geology,
Partly based on Major-General PORTLOCK'S "Rudiments of Geology." By RALPH TATE, A.L.S., &c. Woodcuts 2/0

Historical Geology,
Partly based on Major-General PORTLOCK'S "Rudiments." By RALPH TATE, A.L.S., &c. Woodcuts 2/6

Geology, Physical and Historical.
Consisting of "Physical Geology," which sets forth the Leading Principles of the Science; and "Historical Geology," which treats of the Mineral and Organic Conditions of the Earth at each successive epoch. By RALPH TATE, F.G.S. 4/6

Electro-Metallurgy,
Practically Treated. By ALEXANDER WATT. Tenth Edition, enlarged and revised, including the most Recent Processes 3/6

MECHANICAL ENGINEERING.

The Workman's Manual of Engineering Drawing.
By JOHN MAXTON, Instructor in Engineering Drawing, Royal Naval College, Greenwich. Seventh Edition. 300 Plates and Diagrams . **3/6**

Fuels: Solid, Liquid, and Gaseous.
Their Analysis and Valuation. For the Use of Chemists and Engineers. By H. J. PHILLIPS, F.C.S., formerly Analytical and Consulting Chemist to the Great Eastern Railway. Third Edition **2/0**

Fuel, Its Combustion and Economy.
Consisting of an Abridgment of "A Treatise on the Combustion of Coal and the Prevention of Smoke." By C. W. WILLIAMS, A.I.C.E. With Extensive Additions by D. K. CLARK, M.Inst.C.E. Fourth Edition . **3/6**

The Boilermaker's Assistant
In Drawing, Templating, and Calculating Boiler Work, &c. By J. COURTNEY, Practical Boilermaker. Edited by D. K. CLARK, C.E. . **2/0**

The Boiler-Maker's Ready Reckoner,
With Examples of Practical Geometry and Templating for the Use of Platers, Smiths, and Riveters. By JOHN COURTNEY. Edited by D. K. CLARK, M.I.C.E. Fourth Edition **4/0**

*** *The last two Works in One Volume, half-bound, entitled* "THE BOILER-MAKER'S READY-RECKONER AND ASSISTANT." By J. COURTNEY and D. K. CLARK. *Price* 7/0.

Steam Boilers:
Their Construction and Management. By R. ARMSTRONG, C.E. Illustrated **1/6**

Steam and Machinery Management.
A Guide to the Arrangement and Economical Management of Machinery. By M. POWIS BALE, M.Inst.M.E. **2/6**

Steam and the Steam Engine,
Stationary and Portable. Being an Extension of the Treatise on the Steam Engine of Mr. J. SEWELL. By D. K. CLARK, C.E. Fourth Edition **3/6**

The Steam Engine,
A Treatise on the Mathematical Theory of, with Rules and Examples for Practical Men. By T. BAKER, C.E. **1/6**

The Steam Engine.
By Dr. LARDNER. Illustrated **1/6**

Locomotive Engines,
By G. D. DEMPSEY, C.E. With large Additions treating of the Modern Locomotive, by D. K. CLARK, M.Inst.C.E. **3/0**

Locomotive Engine-Driving.
A Practical Manual for Engineers in charge of Locomotive Engines. By MICHAEL REYNOLDS. Tenth Edition. 3*s.* 6*d.* limp; cloth boards . **4/6**

Stationary Engine-Driving.
A Practical Manual for Engineers in charge of Stationary Engines. By MICHAEL REYNOLDS. Sixth Edition. 3*s.* 6*d.* limp; cloth boards . **4/6**

The Smithy and Forge.
Including the Farrier's Art and Coach Smithing. By W. J. E. CRANE. Fourth Edition **2/6**

Modern Workshop Practice,
As applied to Marine, Land, and Locomotive Engines, Floating Docks, Dredging Machines, Bridges, Ship-building, &c. By J. G. WINTON. Fourth Edition, Illustrated **3/6**

Mechanical Engineering.
Comprising Metallurgy, Moulding, Casting, Forging, Tools, Workshop Machinery, Mechanical Manipulation, Manufacture of the Steam Engine, &c. By FRANCIS CAMPIN, C.E. Third Edition **2/6**

Details of Machinery.
Comprising Instructions for the Execution of various Works in Iron in the Fitting-Shop, Foundry, and Boiler-Yard. By FRANCIS CAMPIN, C.E. **3/0**

Elementary Engineering:
A Manual for Young Marine Engineers and Apprentices. In the Form of Questions and Answers on Metals, Alloys, Strength of Materials, &c. By J. S. Brewer. Fourth Edition 1/6

Power in Motion:
Horse-power Motion, Toothed-Wheel Gearing, Long and Short Driving Bands, Angular Forces, &c. By James Armour, C.E. Third Edition 2/0

Iron and Heat,
Exhibiting the Principles concerned in the Construction of Iron Beams, Pillars, and Girders. By J. Armour, C.E. 2/6

Practical Mechanism,
And Machine Tools. By T. Baker, C.E. With Remarks on Tools and Machinery, by J. Nasmyth, C.E. 2/6

Mechanics:
Being a concise Exposition of the General Principles of Mechanical Science, and their Applications. By Charles Tomlinson, F.R.S. . 1/6

Cranes (The Construction of),
And other Machinery for Raising Heavy Bodies for the Erection of Buildings, &c. By Joseph Glynn, F.R.S. 1/6

NAVIGATION, SHIPBUILDING, ETC.

The Sailor's Sea Book:
A Rudimentary Treatise on Navigation. By James Greenwood, B.A. With numerous Woodcuts and Coloured Plates. New and enlarged Edition. By W. H. Rosser 2/6

Practical Navigation.
Consisting of The Sailor's Sea-Book, by James Greenwood and W. H. Rosser; together with Mathematical and Nautical Tables for the Working of the Problems, by Henry Law, C.E., and Prof. J. R. Young. 7/0

Navigation and Nautical Astronomy,
In Theory and Practice. By Prof. J. R. Young. New Edition. 2/6

Mathematical Tables,
For Trigonometrical, Astronomical, and Nautical Calculations; to which is prefixed a Treatise on Logarithms. By H. Law, C.E. Together with a Series of Tables for Navigation and Nautical Astronomy. By Professor J. R. Young. New Edition 4/0

Masting, Mast-Making, and Rigging of Ships.
Also Tables of Spars, Rigging, Blocks; Chain, Wire, and Hemp Ropes, &c., relative to every class of vessels. By Robert Kipping, N.A. . 2/0

Sails and Sail-Making.
With Draughting, and the Centre of Effort of the Sails. By Robert Kipping, N.A. 2/6

Marine Engines and Steam Vessels.
By R. Murray, C.E. Eighth Edition, thoroughly revised, with Additions by the Author and by George Carlisle, C.E. 4/6

Naval Architecture:
An Exposition of Elementary Principles. By James Peake . . 3/6

Ships for Ocean and River Service,
Principles of the Construction of. By Hakon A. Sommerfeldt . 1/6

Atlas of Engravings
To Illustrate the above. Twelve large folding Plates. Royal 4to, cloth 7/6

The Forms of Ships and Boats.
By W. Bland. Ninth Edition, with numerous Illustrations and Models 1/6

ARCHITECTURE AND THE BUILDING ARTS.

Constructional Iron and Steel Work,

As applied to Public, Private, and Domestic Buildings. By FRANCIS CAMPIN, C.E. 3/6

Building Estates:

A Treatise on the Development, Sale, Purchase, and Management of Building Land. By F. MAITLAND. Third Edition 2/0

The Science of Building:

An Elementary Treatise on the Principles of Construction. By E. WYNDHAM TARN, M.A. Lond. Fourth Edition 3/6

The Art of Building:

General Principles of Construction, Strength, and Use of Materials, Working Drawings, Specifications, &c. By EDWARD DOBSON, M.R.I.B.A. . 2/0

A Book on Building,

Civil and Ecclesiastical. By Sir EDMUND BECKETT, Q.C. (Lord GRIMTHORPE). Second Edition 4/6

Dwelling-Houses (The Erection of),

Illustrated by a Perspective View, Plans, and Sections of a Pair of Villas, with Specification, Quantities, and Estimates. By S. H. BROOKS, Architect 2/6

Cottage Building.

By C. BRUCE ALLEN. Eleventh Edition, with Chapter on Economic Cottages for Allotments, by E. E. ALLEN, C.E. 2/0

Acoustics in Relation to Architecture and Building:

The Laws of Sound as applied to the Arrangement of Buildings. By Professor T. ROGER SMITH, F.R.I.B.A. New Edition, Revised . . 1/6

The Rudiments of Practical Bricklaying.

General Principles of Bricklaying; Arch Drawing, Cutting, and Setting; Pointing; Paving, Tiling, &c. By ADAM HAMMOND. With 68 Woodcuts 1/6

The Art of Practical Brick Cutting and Setting.

By ADAM HAMMOND. With 90 Engravings 1/6

Brickwork:

A Practical Treatise, embodying the General and Higher Principles of Bricklaying, Cutting and Setting; with the Application of Geometry to Roof Tiling, &c. By F. WALKER 1/6

Bricks and Tiles,

Rudimentary Treatise on the Manufacture of; containing an Outline of the Principles of Brickmaking. By E. DOBSON, M.R.I.B.A. Additions by C. TOMLINSON, F.R.S. Illustrated 3/0

The Practical Brick and Tile Book.

Comprising: BRICK AND TILE MAKING, by E. DOBSON, M.INST.C.E.; Practical BRICKLAYING, by A. HAMMOND; BRICK-CUTTING AND SETTING, by A. HAMMOND. 550 pp. with 270 Illustrations, half-bound . . 6/0

Carpentry and Joinery—

THE ELEMENTARY PRINCIPLES OF CARPENTRY. Chiefly composed from the Standard Work of THOMAS TREDGOLD, C.E. With Additions, and TREATISE ON JOINERY, by E. W. TARN, M.A. Seventh Edition 3/6

Carpentry and Joinery—Atlas

Of 35 Plates to accompany and Illustrate the foregoing book. With Descriptive Letterpress. 4to 6/0

A Practical Treatise on Handrailing;
Showing New and Simple Methods. By GEO. COLLINGS. Second Edition, Revised, including a TREATISE ON STAIRBUILDING. With Plates . 2/6

Circular Work in Carpentry and Joinery.
A Practical Treatise on Circular Work of Single and Double Curvature. By GEORGE COLLINGS. Third Edition 2/6

Roof Carpentry:
Practical Lessons in the Framing of Wood Roofs. For the Use of Working Carpenters. By GEO. COLLINGS 2/0

The Construction of Roofs of Wood and Iron;
Deduced chiefly from the Works of Robison, Tredgold, and Humber. By E. WYNDHAM TARN, M.A., Architect. Third Edition . . . 1/6

The Joints Made and Used by Builders.
By WYVILL J. CHRISTY, Architect. With 160 Woodcuts . . 3/0

Shoring
And its Application: A Handbook for the Use of Students. By GEORGE H. BLAGROVE. With 31 Illustrations 1/6

The Timber Importer's, Timber Merchant's, and Builder's Standard Guide.
By R. E. GRANDY 2/0

Plumbing:
A Text-Book to the Practice of the Art or Craft of the Plumber. With Chapters upon House Drainage and Ventilation. By WM. PATON BUCHAN. Eighth Edition, Re-written and Enlarged, with 500 Illustrations . 3/6

Ventilation:
A Text Book to the Practice of the Art of Ventilating Buildings. By W. P. BUCHAN, R.P., Author of "Plumbing," &c. With 170 Illustrations 3/6

The Practical Plasterer:
A Compendium of Plain and Ornamental Plaster Work. By W. KEMP 2/0

House Painting, Graining, Marbling, & Sign Writing.
With a Course of Elementary Drawing, and a Collection of Useful Receipts. By ELLIS A. DAVIDSON. Seventh Edition. Coloured Plates . . 5/0

*** *The above, in cloth boards, strongly bound,* 6/0

A Grammar of Colouring,
Applied to Decorative Painting and the Arts. By GEORGE FIELD. New Edition, enlarged, by ELLIS A. DAVIDSON. With Coloured Plates . 3/0

Elementary Decoration
As applied to Dwelling Houses, &c. By JAMES W. FACEY. Illustrated 2/0

Practical House Decoration.
A Guide to the Art of Ornamental Painting, the Arrangement of Colours in Apartments, and the Principles of Decorative Design. By JAMES W. FACEY. 2/6

*** *The last two Works in One handsome Vol., half-bound, entitled* "HOUSE DECORATION, ELEMENTARY AND PRACTICAL," *price* 5/0

Portland Cement for Users.
By HENRY FAIJA, A.M.Inst.C.E. Third Edition, Corrected . . 2/0

Limes, Cements, Mortars, Concretes, Mastics, Plastering, &c.
By G. R. BURNELL, C.E. Fifteenth Edition 1/6

Masonry and Stone-Cutting.
The Principles of Masonic Projection and their application to Construction. By EDWARD DOBSON, M.R.I.B.A. 2/6

Arches, Piers, Buttresses, &c.:
Experimental Essays on the Principles of Construction. By W. BLAND. 1/6

Quantities and Measurements,
In Bricklayers', Masons', Plasterers', Plumbers', Painters', Paperhangers', Gilders', Smiths', Carpenters' and Joiners' Work By A. C. BEATON 1/6

The Complete Measurer:
Setting forth the Measurement of Boards, Glass, Timber and Stone By R. HORTON. Sixth Edition 4/0

*** *The above, strongly bound in leather, price* 5/0.

Light:
An Introduction to the Science of Optics. Designed for the Use of Students of Architecture, Engineering, and other Applied Sciences. By E. WYNDHAM TARN, M.A., Author of "The Science of Building," &c. . . 1/6

Hints to Young Architects.
By GEORGE WIGHTWICK, Architect. Sixth Edition, revised and enlarged by G. HUSKISSON GUILLAUME, Architect 3/6

Architecture—Orders:
The Orders and their Æsthetic Principles. By W. H. LEEDS. Illustrated. 1/6

Architecture—Styles:
The History and Description of the Styles of Architecture of Various Countries, from the Earliest to the Present Period. By T. TALBOT BURY, F.R.I.B.A. Illustrated 2/0

*** ORDERS AND STYLES OF ARCHITECTURE, *in One Vol.*, 3/6.

Architecture—Design:
The Principles of Design in Architecture, as deducible from Nature and exemplified in the Works of the Greek and Gothic Architects. By EDW. LACY GARBETT, Architect. Illustrated 2/6

*** *The three preceding Works in One handsome Vol., half bound, entitled* "MODERN ARCHITECTURE," *price* 6/0.

Perspective for Beginners.
Adapted to Young Students and Amateurs in Architecture, Painting, &c. By GEORGE PYNE 2/0

Architectural Modelling in Paper.
By T. A. RICHARDSON. With Illustrations, engraved by O. JEWITT 1/6

Glass Staining, and the Art of Painting on Glass.
From the German of Dr. GESSERT and EMANUEL OTTO FROMBERG. With an Appendix on THE ART OF ENAMELLING 2/6

Vitruvius—The Architecture of.
In Ten Books. Translated from the Latin by JOSEPH GWILT, F.S.A., F.R.A.S. With 23 Plates 5/0

N.B.—This is the only Edition of VITRUVIUS *procurable at a moderate price*

Grecian Architecture,
An Inquiry into the Principles of Beauty in. With an Historical View of the Rise and Progress of the Art in Greece. By the EARL OF ABERDEEN 1/0

*** *The two preceding Works in One handsome Vol., half bound, entitled* "ANCIENT ARCHITECTURE," *price* 6/0.

INDUSTRIAL AND USEFUL ARTS.

Cements, Pastes, Glues, and Gums.
A Practical Guide to the Manufacture and Application of the various Agglutinants required for Workshop, Laboratory, or Office Use. With upwards of 900 Recipes and Formulæ. By H. C. STANDAGE . . 2/0

Clocks and Watches, and Bells,
A Rudimentary Treatise on. By Sir EDMUND BECKETT, Q.C. (Lord GRIMTHORPE). Seventh Edition 4/6

The Goldsmith's Handbook.
Containing full Instructions in the Art of Alloying, Melting, Reducing, Colouring, Collecting and Refining, Recovery of Waste, Solders, Enamels, &c., &c. By GEORGE E. GEE. Fifth Edition 3/0

The Silversmith's Handbook,
On the same plan as the GOLDSMITH'S HANDBOOK. By GEORGE E. GEE. Third Edition 3/0
*** *The last two Works, in One handsome Vol., half-bound,* 7/0.

The Hall-Marking of Jewellery.
Comprising an account of all the different Assay Towns of the United Kingdom; with the Stamps and Laws relating to the Standards and Hall-Marks at the various Assay Offices. By GEORGE E. GEE . . 3/0

French Polishing and Enamelling.
A Practical Work of Instruction, including numerous Recipes for making Polishes, Varnishes, Glaze-Lacquers, Revivers, &c. By R. BITMEAD.
[*Just Published.* 1/6

Practical Organ Building.
By W. E. DICKSON, M.A. Second Edition, Revised, with Additions 2/6

Coach-Building:
A Practical Treatise. By JAMES W. BURGESS. With 57 Illustrations 2/6

The Brass Founder's Manual:
Instructions for Modelling, Pattern Making, Moulding, Turning, &c. By W. GRAHAM 2/0

The Sheet-Metal Worker's Guide.
A Practical Handbook for Tinsmiths, Coppersmiths, Zincworkers, &c., with 46 Diagrams. By W. J. E. CRANE. Third Edition, revised . . 1/6

Sewing Machinery:
Its Construction, History, &c. With full Technical Directions for Adjusting, &c. By J. W. URQUHART, C.E. 2/0

Gas Fitting:
A Practical Handbook. By JOHN BLACK. New Edition . . 2/6

Construction of Door Locks.
From the Papers of A. C. HOBBS. Edited by C. TOMLINSON, F.R.S. 2/6

The Model Locomotive Engineer, Fireman, and Engine-Boy.
Comprising an Historical Notice of the Pioneer Locomotive Engines and their Inventors. By MICHAEL REYNOLDS 3/6

The Art of Letter Painting made Easy.
By J. G. BADENOCH. With 12 full-page Engravings of Examples . 1/6

The Art of Boot and Shoemaking.
Including Measurement, Last-fitting, Cutting-out, Closing and Making. By JOHN BEDFORD LENO. With numerous Illustrations. Fourth Edition. 2/0

Mechanical Dentistry:
A Practical Treatise on the Construction of the Various Kinds of Artificial Dentures. By CHARLES HUNTER. Fourth Edition 3/0

Wood Engraving:
A Practical and Easy Introduction to the Art. By W. N. BROWN . 1/6

Laundry Management.
A Handbook for Use in Private and Public Laundries. By the EDITOR of "The Laundry Journal." 2/0

AGRICULTURE, GARDENING, ETC.

Draining and Embanking:
A Practical Treatise. By Prof. JOHN SCOTT. With 68 Illustrations 1/6

Irrigation and Water Supply:
A Practical Treatise on Water Meadows, Sewage Irrigation, Warping, &c.; on the Construction of Wells, Ponds, Reservoirs, &c. By Prof. JOHN SCOTT. With 34 Illustrations 1/6

Farm Roads, Fences, and Gates:
A Practical Treatise on the Roads, Tramways, and Waterways of the Farm; the Principles of Enclosures; and the different kinds of Fences, Gates, and Stiles. By Prof. JOHN SCOTT. With 75 Illustrations . 1/6

Farm Buildings:
A Practical Treatise on the Buildings necessary for various kinds of Farms, their Arrangement and Construction, with Plans and Estimates. By Prof. JOHN SCOTT. With 105 Illustrations 2/0

Barn Implements and Machines:
Treating of the Application of Power and Machines used in the Threshing-barn, Stockyard, Dairy, &c. By Prof. J. SCOTT. With 123 Illustrations. 2/0

Field Implements and Machines:
With Principles and Details of Construction and Points of Excellence, their Management, &c. By Prof. JOHN SCOTT. With 138 Illustrations 2/0

Agricultural Surveying:
A Treatise on Land Surveying, Levelling, and Setting-out; with Directions for Valuing Estates. By Prof. J. SCOTT. With 62 Illustrations . 1/6

Farm Engineering.
By Professor JOHN SCOTT. Comprising the above Seven Volumes in One, 1,150 pages, and over 600 Illustrations. Half-bound 12/0

Outlines of Farm Management.
Treating of the General Work of the Farm; Stock; Contract Work; Labour, &c. By R. SCOTT BURN 2/6

Outlines of Landed Estates Management.
Treating of the Varieties of Lands, Methods of Farming, Setting-out of Farms, Roads, Fences, Gates, Drainage, &c. By R. SCOTT BURN . 2/6
*** *The above Two Vols. in One, handsomely half-bound, price* 6/0

Soils, Manures, and Crops.
(Vol. I. OUTLINES OF MODERN FARMING.) By R. SCOTT BURN . 2/0

Farming and Farming Economy.
(Vol. II. OUTLINES OF MODERN FARMING.) By R. SCOTT BURN 3/0

Stock: Cattle, Sheep, and Horses.
(Vol. III. OUTLINES OF MODERN FARMING.) By R. SCOTT BURN 2/6

Dairy, Pigs, and Poultry.
(Vol. IV. OUTLINES OF MODERN FARMING.) By R. SCOTT BURN 2/0

Utilization of Sewage, Irrigation, and Reclamation of Waste Land.
(Vol. V. OUTLINES OF MODERN FARMING.) By R. SCOTT BURN . 2/6

Outlines of Modern Farming.
By R. SCOTT BURN. Consisting of the above Five Volumes in One, 1,250 pp., profusely Illustrated, half-bound 12/0

Book-keeping for Farmers and Estate Owners.
A Practical Treatise, presenting, in Three Plans, a System adapted for all classes of Farms. By J. M. WOODMAN. Third Edition, revised . 2/6

Ready Reckoner for the Admeasurement of Land.
By A. ARMAN. Fourth Edition, revised and extended by C. NORRIS 2/0

Miller's, Corn Merchant's, and Farmer's Ready Reckoner.
Second Edition, revised, with a Price List of Modern Flour Mill Machinery, by W. S. HUTTON, C.E. 2/0

The Hay and Straw Measurer.
New Tables for the Use of Auctioneers, Valuers, Farmers, Hay and Straw Dealers, &c. By JOHN STEELE 2/0

Meat Production.
A Manual for Producers, Distributors, and Consumers of Butchers' Meat. By JOHN EWART 2/6

Sheep:
The History, Structure, Economy, and Diseases of. By W. C. SPOONER, M.R.V.S. Fifth Edition, with fine Engravings 3/6

Market and Kitchen Gardening.
By C. W. SHAW, late Editor of "Gardening Illustrated" 3/0

Kitchen Gardening Made Easy.
Showing the best means of Cultivating every known Vegetable and Herb, &c., with directions for management all the year round. By GEORGE M. F. GLENNY. Illustrated 1/6

Cottage Gardening:
Or Flowers, Fruits, and Vegetables for Small Gardens. By E. HOBDAY. 1/6

Garden Receipts.
Edited by CHARLES W. QUIN 1/6

Fruit Trees,
The Scientific and Profitable Culture of. From the French of M. DU BREUIL. Fifth Edition, carefully Revised by GEORGE GLENNY. With 187 Woodcuts 3/6

The Tree Planter and Plant Propagator:
With numerous Illustrations of Grafting, Layering, Budding, Implements, Houses, Pits, &c. By SAMUEL WOOD 2/0

The Tree Pruner:
A Practical Manual on the Pruning of Fruit Trees, Shrubs, Climbers, and Flowering Plants. With numerous Illustrations. By SAMUEL WOOD 1/6

*** *The above Two Vols. in One, handsomely half-bound, price* 3/6

The Art of Grafting and Budding.
By CHARLES BALTET. With Illustrations 2/6

MATHEMATICS, ARITHMETIC, ETC.

Descriptive Geometry,
An Elementary Treatise on; with a Theory of Shadows and of Perspective, extracted from the French of G. MONGE. To which is added a Description of the Principles and Practice of Isometrical Projection. By J. F. HEATHER, M.A. With 14 Plates 2/0

Practical Plane Geometry:
Giving the Simplest Modes of Constructing Figures contained in one Plane and Geometrical Construction of the Ground. By J. F. HEATHER, M.A. With 215 Woodcuts 2/0

Analytical Geometry and Conic Sections,
A Rudimentary Treatise on. By JAMES HANN. A New Edition, re-written and enlarged by Professor J. R. YOUNG 2/0

Euclid (The Elements of).
With many Additional Propositions and Explanatory Notes; to which is prefixed an Introductory Essay on Logic. By HENRY LAW, C.E. . 2/6

**** Sold also separately, viz:—*

Euclid. The First Three Books. By HENRY LAW, C.E. 1/6
Euclid. Books 4, 5, 6, 11, 12. By HENRY LAW, C.E. . . 1/6

Plane Trigonometry,
The Elements of. By JAMES HANN. 1/6

Spherical Trigonometry,
The Elements of. By JAMES HANN. Revised by CHARLES H. DOWLING, C.E. 1/0

**** Or with "The Elements of Plane Trigonometry," in One Volume,* 2/6

Differential Calculus,
Elements of the. By W. S. B. WOOLHOUSE, F.R.A.S., &c. . . 1/6

Integral Calculus.
By HOMERSHAM COX, B.A. 1/3

Algebra,
The Elements of. By JAMES HADDON, M.A. With Appendix, containing Miscellaneous Investigations, and a Collection of Problems . . 2/0

A Key and Companion to the Above.
An extensive Repository of Solved Examples and Problems in Algebra. By J. R. YOUNG 1/6

Commercial Book-keeping.
With Commercial Phrases and Forms in English, French, Italian, and German. By JAMES HADDON, M.A. 1/6

Arithmetic,
A Rudimentary Treatise on. With full Explanations of its Theoretical Principles, and numerous Examples for Practice. For the Use of Schools and for Self-Instruction. By J. R. YOUNG, late Professor of Mathematics in Belfast College. Thirteenth Edition 1/6

A Key to the Above.
By J. R. YOUNG 1/6

Equational Arithmetic,
Applied to Questions of Interest, Annuities, Life Assurance, and General Commerce; with various Tables by which all Calculations may be greatly facilitated. By W. HIPSLEY 1/6

Arithmetic,
Rudimentary, for the Use of Schools and Self-Instruction. By JAMES HADDON, M.A. Revised by ABRAHAM ARMAN 1/6

A Key to the Above.
By A. ARMAN 1/6

Mathematical Instruments:

Their Construction, Adjustment, Testing, and Use concisely Explained. By J. F. HEATHER, M.A., of the Royal Military Academy, Woolwich. Fourteenth Edition, Revised, with Additions, by A. T. WALMISLEY, M.I.C.E. Original Edition, in 1 vol., Illustrated 2/0

*** *In ordering the above, be careful to say "Original Edition," or give the number in the Series* (32), *to distinguish it from the Enlarged Edition in* 3 *vols.* (*as follows*)—

Drawing and Measuring Instruments.

Including—I. Instruments employed in Geometrical and Mechanical Drawing, and in the Construction, Copying, and Measurement of Maps and Plans. II. Instruments used for the purposes of Accurate Measurement, and for Arithmetical Computations. By J. F. HEATHER, M.A. . 1/6

Optical Instruments.

Including (more especially) Telescopes, Microscopes, and Apparatus for producing copies of Maps and Plans by Photography. By J. F. HEATHER, M.A. Illustrated 1/6

Surveying and Astronomical Instruments.

Including—I. Instruments used for Determining the Geometrical Features of a portion of Ground. II. Instruments employed in Astronomical Observations. By J. F. HEATHER, M.A. Illustrated. . . . 1/6

*** *The above three volumes form an enlargement of the Author's original work, "Mathematical Instruments," price* 2/0. (*Described at top of page.*)

Mathematical Instruments:

Their Construction, Adjustment, Testing and Use. Comprising Drawing, Measuring, Optical, Surveying, and Astronomical Instruments. By J. F. HEATHER, M.A. Enlarged Edition, for the most part entirely re-written. The Three Parts as above, in One thick Volume. 4/6

The Slide Rule, and How to Use It.

Containing full, easy, and simple Instructions to perform all Business Calculations with unexampled rapidity and accuracy. By CHARLES HOARE, C.E. With a Slide Rule, in tuck of cover. Seventh Edition . . 2/6

Logarithms.

With Mathematical Tables for Trigonometrical, Astronomical, and Nautical Calculations. By HENRY LAW, C.E. Revised Edition . . . 3/0

Compound Interest and Annuities (Theory of).

With Tables of Logarithms for the more Difficult Computations of Interest, Discount, Annuities, &c., in all their Applications and Uses for Mercantile and State Purposes. By FEDOR THOMAN, Paris. Fourth Edition . 4/0

Mathematical Tables,

For Trigonometrical, Astronomical, and Nautical Calculations; to which is prefixed a Treatise on Logarithms. By H. LAW, C.E. Together with a Series of Tables for Navigation and Nautical Astronomy. By Professor J. R. YOUNG. New Edition 4/0

Mathematics,

As applied to the Constructive Arts. By FRANCIS CAMPIN, C.E., &c. Third Edition 3/0

Astronomy.

By the late Rev. ROBERT MAIN, F.R.S. Third Edition, revised and corrected to the Present Time. By W. T. LYNN, F.R.A.S. 2/0

Statics and Dynamics.

The Principles and Practice of. Embracing also a clear development of Hydrostatics, Hydrodynamics, and Central Forces. By T. BAKER, C.E. Fourth Edition 1/6

BOOKS OF REFERENCE AND MISCELLANEOUS VOLUMES.

A Dictionary of Painters, and Handbook for Picture Amateurs.
Being a Guide for Visitors to Public and Private Picture Galleries, and for Art-Students, including Glossary of Terms, Sketch of Principal Schools of Painting, &c. By PHILIPPE DARYL, B.A. **2/6**

Painting Popularly Explained.
By T. J. GULLICK, Painter, and JOHN TIMBS, F.S.A. Including Fresco, Oil, Mosaic, Water Colour, Water-Glass, Tempera Encaustic, Miniature, Painting on Ivory, Vellum, Pottery, Enamel, Glass, &c. Sixth Edition **5/0**

A Dictionary of Terms used in Architecture, Building, Engineering, Mining, Metallurgy, Archæology, the Fine Arts, &c.
By JOHN WEALE. Sixth Edition. Edited by R. HUNT, F.R.S. . **5/0**

Music:
A Rudimentary and Practical Treatise. With numerous Examples. By CHARLES CHILD SPENCER **2/6**

Pianoforte,
The Art of Playing the. With numerous Exercises and Lessons. By CHARLES CHILD SPENCER **1/6**

The House Manager.
A Guide to Housekeeping, Cookery, Pickling and Preserving, Household Work, Dairy Management, Cellarage of Wines, Home-brewing and Wine-making, Gardening, &c. By AN OLD HOUSEKEEPER . . **3/6**

Manual of Domestic Medicine.
By R. GOODING, M.D. Intended as a Family Guide in all cases of Accident and Emergency. Third Edition, carefully revised . . **2/0**

Management of Health.
A Manual of Home and Personal Hygiene. By Rev. JAMES BAIRD **1/0**

Natural Philosophy,
For the Use of Beginners. By CHARLES TOMLINSON, F.R.S. . . **1/6**

The Elementary Principals of Electric Lighting.
By ALAN A. CAMPBELL SWINTON, M.INST.C.E., M.I.E.E. Fourth Edition, Revised . . . . [*Just Published* **1/6**

The Electric Telegraph,
Its History and Progress. By R. SABINE, C.E., F.S.A., &c. . . **3/0**

Handbook of Field Fortification.
By Major W. W. KNOLLYS, F.R.G.S. With 163 Woodcuts . . **3/0**

Logic,
Pure and Applied. By S. H. EMMENS. Third Edition **1/6**

Locke on the Human Understanding,
Selections from. With Notes by S. H. EMMENS **1/6**

The Compendious Calculator
(*Intuitive Calculations*). Or Easy and Concise Methods of Performing the various Arithmetical Operations required in Commercial and Business Transactions; together with Useful Tables, &c. By DANIEL O'GORMAN. Twenty-seventh Edition, carefully revised by C. NORRIS . . . **2/6**

Measures, Weights, and Moneys of all Nations.
With an Analysis of the Christian, Hebrew, and Mahometan Calendars. By W. S. B. WOOLHOUSE, F.R.A.S., F.S.S. Seventh Edition . **2/6**

Grammar of the English Tongue,
Spoken and Written. With an Introduction to the Study of Comparative Philology. By HYDE CLARKE, D.C.L. Fifth Edition. . . . **1/6**

Dictionary of the English Language.
As Spoken and Written. Containing above 100,000 Words. By HYDE CLARKE, D.C.L. **3/6**
Complete with the GRAMMAR, **5/6**

Composition and Punctuation,
Familiarly Explained for those who have neglected the Study of Grammar. By JUSTIN BRENAN. 18th Edition. **1/6**

French Grammar.
With Complete and Concise Rules on the Genders of French Nouns. By G. L. STRAUSS, Ph.D. **1/6**

English-French Dictionary.
Comprising a large number of Terms used in Engineering, Mining, &c. By ALFRED ELWES **2/0**

French Dictionary.
In two Parts—I. French-English. II. English-French, complete in One Vol. **3/0**
*** *Or with the* GRAMMAR, **4/6**.

French and English Phrase Book.
Containing Introductory Lessons, with Translations, Vocabularies of Words, Collection of Phrases, and Easy Familiar Dialogues **1/6**

German Grammar.
Adapted for English Students, from Heyse's Theoretical and Practical Grammar, by Dr. G. L. STRAUSS **1/6**

German Triglot Dictionary.
By N. E. S. A. HAMILTON. Part I. German-French-English. Part II. English-German-French. Part III. French-German-English . **3/0**

German Triglot Dictionary.
(As above). Together with German Grammar, in One Volume . **5/0**

Italian Grammar.
Arranged in Twenty Lessons, with Exercises. By ALFRED ELWES. **1/6**

Italian Triglot Dictionary,
Wherein the Genders of all the Italian and French Nouns are carefully noted down. By ALFRED ELWES. Vol. I. Italian-English-French. **2/6**

Italian Triglot Dictionary.
By ALFRED ELWES. Vol. II. English-French-Italian . . . **2/6**

Italian Triglot Dictionary.
By ALFRED ELWES. Vol. III. French-Italian-English . . . **2/6**

Italian Triglot Dictionary.
(As above). In One Vol. **7/6**

Spanish Grammar.
In a Simple and Practical Form. With Exercises. By ALFRED ELWES **1/6**

Spanish-English and English-Spanish Dictionary.
Including a large number of Technical Terms used in Mining, Engineering, &c., with the proper Accents and the Gender of every Noun. By ALFRED ELWES **4/0**
*** *Or with the* GRAMMAR, **6/0**.

Portuguese Grammar,
In a Simple and Practical Form. With Exercises. By ALFRED ELWES **1/6**

Portuguese-English and English-Portuguese Dictionary.
Including a large number of Technical Terms used in Mining, Engineering, &c., with the proper Accents and the Gender of every Noun. By ALFRED ELWES. Third Edition, revised **5/0**

_ *Or with the* GRAMMAR, **7/0.**

Animal Physics,
Handbook of. By DIONYSIUS LARDNER, D.C.L. With 520 Illustrations. In One Vol. (732 pages), cloth boards **7/6**

_ *Sold also in Two Parts, as follows:—*

ANIMAL PHYSICS. By Dr. LARDNER. Part I., Chapters I.—VII. **4/0**

ANIMAL PHYSICS. By Dr. LARDNER. Part II., Chapters VIII.—XVIII. **3/0**

CROSBY LOCKWOOD & SON'S
Catalogue of
Scientific, Technical and Industrial Books.

	PAGE		PAGE
MECHANICAL ENGINEERING	1	DECORATIVE ARTS	80
CIVIL ENGINEERING	10	NATURAL SCIENCE	82
MARINE ENGINEERING, &c.	17	CHEMICAL MANUFACTURES	84
MINING & METALLURGY	19	INDUSTRIAL ARTS	86
ELECTRICITY	23	COMMERCE, TABLES, &c.	41
ARCHITECTURE & BUILDING	25	AGRICULTURE & GARDENING	43
SANITATION & WATER SUPPLY	27	AUCTIONEERING, VALUING, &c.	46
CARPENTRY & TIMBER	28	LAW & MISCELLANEOUS	47

MECHANICAL ENGINEERING, &c.

THE MECHANICAL ENGINEER'S POCKET-BOOK.

Comprising Tables, Formulæ, Rules, and Data: A Handy Book of Reference for Daily Use in Engineering Practice. By D. KINNEAR CLARK, M. Inst. C.E., Fourth Edition. Small 8vo, 700 pp., bound in flexible Leather Cover, rounded corners **6/0**

SUMMARY OF CONTENTS:—MATHEMATICAL TABLES.—MEASUREMENT OF SURFACES AND SOLIDS.—ENGLISH AND FOREIGN WEIGHTS AND MEASURES.—MONEYS.—SPECIFIC GRAVITY, WEIGHT, AND VOLUME.—MANUFACTURED METALS.—STEEL PIPES.—BOLTS AND NUTS.—SUNDRY ARTICLES IN WROUGHT AND CAST IRON, COPPER, BRASS, LEAD, TIN, ZINC.—STRENGTH OF TIMBER.—STRENGTH OF CAST IRON.—STRENGTH OF WROUGHT IRON.—STRENGTH OF STEEL.—TENSILE STRENGTH OF COPPER, LEAD, &c.—RESISTANCE OF STONES AND OTHER BUILDING MATERIALS.—RIVETED JOINTS IN BOILER PLATES.—BOILER SHELLS.—WIRE ROPES AND HEMP ROPES.—CHAINS AND CHAIN CABLES.—FRAMING.—HARDNESS OF METALS, ALLOYS, AND STONES.—LABOUR OF ANIMALS.—MECHANICAL PRINCIPLES.—GRAVITY AND FALL OF BODIES.—ACCELERATING AND RETARDING FORCES.—MILL GEARING, SHAFTING, &c.—TRANSMISSION OF MOTIVE POWER.—HEAT.—COMBUSTION: FUELS.—WARMING, VENTILATION, COOKING STOVES.—STEAM.—STEAM ENGINES AND BOILERS.—RAILWAYS.—TRAMWAYS.—STEAM SHIPS.—PUMPING STEAM ENGINES AND PUMPS.—COAL GAS, GAS ENGINES, &c.—AIR IN MOTION.—COMPRESSED AIR.—HOT AIR ENGINES.—WATER POWER.—SPEED OF CUTTING TOOLS.—COLOURS.—ELECTRICAL ENGINEERING.

"Mr. Clark manifests what is an innate perception of what is likely to be useful in a pocket-book, and he is really unrivalled in the art of condensation. It is very difficult to hit upon any mechanical engineering subject concerning which this work supplies no information, and the excellent index at the end adds to its utility. In one word, it is an exceedingly handy and efficient tool, possessed of which the engineer will be saved many a wearisome calculation, or yet more wearisome hunt through various text-books and treatises, and, as such, we can heartily recommend it to our readers."—*The Engineer.*

"It would be found difficult to compress more matter within a similar compass, or produce a book of 690 pages which should be more compact or convenient for pocket reference. . . . Will be appreciated by mechanical engineers of all classes."—*Practical Engineer.*

MR. HUTTON'S PRACTICAL HANDBOOKS.

THE WORKS' MANAGER'S HANDBOOK.

Comprising Modern Rules, Tables, and Data. For Engineers, Millwrights, and Boiler Makers; Tool Makers, Machinists, and Metal Workers; Iron and Brass Founders, &c. By W. S. HUTTON, Civil and Mechanical Engineer, Author of "The Practical Engineer's Handbook." Fifth Edition, carefully Revised, with Additions. In One handsome Volume, medium 8vo, strongly bound **15/0**

☞ *The Author having compiled Rules and Data for his own use in a great variety of modern engineering work, and having found his notes extremely useful, decided to publish them—revised to date—believing that a practical work, suited to the* DAILY REQUIREMENTS OF MODERN ENGINEERS, *would be favourably received.*

"Of this edition we may repeat the appreciative remarks we made upon the first and third. Since the appearance of the latter very considerable modifications have been made, although the total number of pages remains almost the same. It is a very useful collection of rules, tables, and workshop and drawing office data."—*The Engineer*, May 10, 1895.

"The author treats every subject from the point of view of one who has collected workshop notes for application in workshop practice, rather than from the theoretical or literary aspect. The volume contains a great deal of that kind of information which is gained only by practical experience, and is seldom written in books."—*The Engineer*, June 5, 1885.

"The volume is an exceedingly useful one, brimful with engineer's notes, memoranda, and rules, and well worthy of being on every mechanical engineer's bookshelf."—*Mechanical World.*

"The information is precisely that likely to be required in practice. . . . The work forms a desirable addition to the library not only of the works' manager, but of any one connected with general engineering."—*Mining Journal.*

"Brimful of useful information, stated in a concise form, Mr. Hutton's books have met a pressing want among engineers. The book must prove extremely useful to every practical man possessing a copy."—*Practical Engineer.*

THE PRACTICAL ENGINEER'S HANDBOOK.

Comprising a Treatise on Modern Engines and Boilers, Marine, Locomotive, and Stationary. And containing a large collection of Rules and Practical Data relating to Recent Practice in Designing and Constructing all kinds of Engines, Boilers, and other Engineering work. The whole constituting a comprehensive Key to the Board of Trade and other Examinations for Certificates of Competency in Modern Mechanical Engineering. By WALTER S. HUTTON, Civil and Mechanical Engineer, Author of "The Works' Manager's Handbook for Engineers," &c. With upwards of 370 Illustrations. Fifth Edition, Revised with Additions. Medium 8vo, nearly 500 pp., strongly bound.
[*Just Published.* **18/0**

☞ *This Work is designed as a companion to the Author's* "WORKS' MANAGER'S HANDBOOK." *It possesses many new and original features, and contains, like its predecessor, a quantity of matter not originally intended for publication, but collected by the Author for his own use in the construction of a great variety of* MODERN ENGINEERING WORK.

The information is given in a condensed and concise form, and is illustrated by upwards of 370 *Woodcuts; and comprises a quantity of tabulated matter of great value to all engaged in designing, constructing, or estimating for* ENGINES, BOILERS, *and* OTHER ENGINEERING WORK.

"We have kept it at hand for several weeks, referring to it as occasion arose, and we have not on a single occasion consulted its pages without finding the information of which we were in quest." —*Athenæum.*

"A thoroughly good practical handbook, which no engineer can go through without learning something that will be of service to him."—*Marine Engineer.*

"An excellent book of reference for engineers, and a valuable text-book for students of engineering."—*Scotsman.*

"This valuable manual embodies the results and experience of the leading authorities on mechanical engineering."—*Building News.*

"The author has collected together a surprising quantity of rules and practical data, and has shown much judgment in the selections he has made. . . . There is no doubt that this book is one of the most useful of its kind published, and will be a very popular compendium."—*Engineer.*

"A mass of information set down in simple language, and in such a form that it can be easily referred to at any time. The matter is uniformly good and well chosen, and is greatly elucidated by the illustrations. The book will find its way on to most engineers' shelves, where it will rank as one of the most useful books of reference."—*Practical Engineer.*

"Full of useful information, and should be found on the office shelf of all practical engineers." —*English Mechanic.*

MR. HUTTON'S PRACTICAL HANDBOOKS—*continued.*

STEAM BOILER CONSTRUCTION.

A Practical Handbook for Engineers, Boiler-Makers, and Steam Users. Containing a large Collection of Rules and Data relating to Recent Practice in the Design, Construction, and Working of all Kinds of Stationary, Locomotive, and Marine Steam-Boilers. By WALTER S. HUTTON, Civil and Mechanical Engineer, Author of "The Works' Manager's Handbook," "The Practical Engineer's Handbook," &c. With upwards of 500 Illustrations. Third Edition, Revised and much Enlarged, medium 8vo, cloth . . **18/0**

☞ THIS WORK *is issued in continuation of the Series of Handbooks written by the Author, viz.:—*"THE WORKS' MANAGER'S HANDBOOK" *and* "THE PRACTICAL ENGINEER'S HANDBOOK," *which are so highly appreciated by engineers for the practical nature of their information; and is consequently written in the same style as those works.*

The Author believes that the concentration, in a convenient form for easy reference, of such a large amount of thoroughly practical information on Steam-Boilers, will be of considerable service to those for whom it is intended, and he trusts the book may be deemed worthy of as favourable a reception as has been accorded to its predecessors.

"One of the best, if not the best, books on boilers that has ever been published. The information is of the right kind, in a simple and accessible form. So far as generation is concerned, this is, undoubtedly, the standard book on steam practice."—*Electrical Review.*

"Every detail, both in boiler design and management, is clearly laid before the reader. The volume shows that boiler construction has been reduced to the condition of one of the most exact sciences; and such a book is of the utmost value to the *fin de siècle* Engineer and Works Manager."—*Marine Engineer.*

"There has long been room for a modern handbook on steam boilers; there is not that room now, because Mr. Hutton has filled it. It is a thoroughly practical book for those who are occupied in the construction, design, selection, or use of boilers."—*Engineer.*

"The book is of so important and comprehensive a character that it must find its way into the libraries of every one interested in boiler using or boiler manufacture if they wish to be thoroughly informed. We strongly recommend the book for the intrinsic value of its contents."—*Machinery Market.*

PRACTICAL MECHANICS' WORKSHOP COMPANION.

Comprising a great variety of the most useful Rules and Formulæ in Mechanical Science, with numerous Tables of Practical Data and Calculated Results for Facilitating Mechanical Operations. By WILLIAM TEMPLETON, Author of "The Engineer's Practical Assistant," &c., &c. Seventeenth Edition, Revised, Modernised, and considerably Enlarged by WALTER S. HUTTON, C.E., Author of "The Works' Manager's Handbook," "The Practical Engineer's Handbook," &c. Fcap. 8vo, nearly 500 pp., with 8 Plates and upwards of 250 Illustrative Diagrams, strongly bound for workshop or pocket wear and tear. **6/0**

"In its modernised form Hutton's 'Templeton' should have a wide sale, fo it contains much valuable information which the mechanic will often find of use, and not a few tables and notes which he might look for in vain in other works. This modernised edition will be appreciated by all who have learned to value the original editions of 'Templeton.'"—*English Mechanic.*

"It has met with great success in the engineering workshop, as we can testify; and there are a great many men who, in a great measure, owe their rise in life to this little book."—*Building News.*

"This familiar text-book—well known to all mechanics and engineers—is of essential service to the every-day requirements of engineers, millwrights, and the various trades connected with engineering and building. The new modernised edition is worth its weight in gold."—*Building News.* (Second Notice.)

"This well-known and largely-used book contains information, brought up to date, of the sort so useful to the foreman and draughtsman. So much fresh information has been introduced as to constitute it practically a new book. It will be largely used in the office and workshop."—*Mechanical World.*

"The publishers wisely entrusted the task of revision of this popular, valuable, and useful book to Mr. Hutton, than whom a more competent man they could not have found."—*Iron.*

ENGINEER'S AND MILLWRIGHT'S ASSISTANT.

A Collection of Useful Tables, Rules, and Data. By WILLIAM TEMPLETON. Seventh Edition, with Additions. 18mo, cloth **2/6**

"Occupies a foremost place among books of this kind. A more suitable present to an apprentice to any of the mechanical trades could not possibly be made."—*Building News.*

"A deservedly popular work. It should be in the 'drawer' of every mechanic."—*English Mechanic.*

THE MECHANICAL ENGINEER'S REFERENCE BOOK.

For Machine and Boiler Construction. In Two Parts. Part I. GENERAL ENGINEERING DATA. Part II. BOILER CONSTRUCTION. With 51 Plates and numerous Illustrations. By NELSON FOLEY, M.I.M.A. Second Edition, Revised throughout and much Enlarged. Folio, half-bound, net . **£3 3s.**

PART I.—MEASURES.—CIRCUMFERENCES AND AREAS, &c., SQUARES, CUBES, FOURTH POWERS.—SQUARE AND CUBE ROOTS.—SURFACE OF TUBES.—RECIPROCALS.—LOGARITHMS.—MENSURATION.—SPECIFIC GRAVITIES AND WEIGHTS.—WORK AND POWER.—HEAT.—COMBUSTION.—EXPANSION AND CONTRACTION.—EXPANSION OF GASES.—STEAM.—STATIC FORCES.—GRAVITATION AND ATTRACTION.—MOTION AND COMPUTATION OF RESULTING FORCES.—ACCUMULATED WORK.—CENTRE AND RADIUS OF GYRATION.—MOMENT OF INERTIA.—CENTRE OF OSCILLATION.—ELECTRICITY.—STRENGTH OF MATERIALS.—ELASTICITY.—TEST SHEETS OF METALS.—FRICTION.—TRANSMISSION OF POWER.—FLOW OF LIQUIDS.—FLOW OF GASES.—AIR PUMPS, SURFACE CONDENSERS, &c.—SPEED OF STEAMSHIPS.—PROPELLERS.—CUTTING TOOLS.—FLANGES.—COPPER SHEETS AND TUBES.—SCREWS, NUTS, BOLT HEADS, &c.—VARIOUS RECIPES AND MISCELLANEOUS MATTER.—WITH DIAGRAMS FOR VALVE-GEAR, BELTING AND ROPES, DISCHARGE AND SUCTION PIPES, SCREW PROPELLERS, AND COPPER PIPES.

PART II.—TREATING OF POWER OF BOILERS.—USEFUL RATIOS.—NOTES ON CONSTRUCTION.—CYLINDRICAL BOILER SHELLS.—CIRCULAR FURNACES.—FLAT PLATES.—STAYS.—GIRDERS.—SCREWS.—HYDRAULIC TESTS.—RIVETING.—BOILER SETTING, CHIMNEYS, AND MOUNTINGS.—FUELS, &c.—EXAMPLES OF BOILERS AND SPEEDS OF STEAMSHIPS.—NOMINAL AND NORMAL HORSE POWER.—WITH DIAGRAMS FOR ALL BOILER CALCULATIONS AND DRAWINGS OF MANY VARIETIES OF BOILERS.

"The book is one which every mechanical engineer may, with advantage to himself, add to his library."—*Industries.*

"Mr. Foley is well fitted to compile such a work. . . . The diagrams are a great feature of the work. . . . Regarding the whole work, it may be very fairly stated that Mr. Foley has produced a volume which will undoubtedly fulfil the desire of the author and become indispensable to all mechanical engineers."—*Marine Engineer.*

"We have carefully examined this work, and pronounce it a most excellent reference book for the use of marine engineers."—*Journal of American Society of Naval Engineers.*

COAL AND SPEED TABLES.

A Pocket Book for Engineers and Steam Users. By NELSON FOLEY, Author of "The Mechanical Engineer's Reference Book." Pocket-size, cloth . **3/6**

"These tables are designed to meet the requirements of every-day use; are of sufficient scope for most practical purposes, and may be commended to engineers and users of steam."—*Iron.*

TEXT-BOOK ON THE STEAM ENGINE.

With a Supplement on GAS ENGINES, and PART II. on HEAT ENGINES. By T. M. GOODEVE, M.A., Barrister-at-Law, Professor of Mechanics at the Royal College of Science, London; Author of "The Principles of Mechanics," "The Elements of Mechanism," &c. Fourteenth Edition. Crown 8vo, cloth . **6/0**

"Professor Goodeve has given us a treatise on the steam engine which will bear comparison with anything written by Huxley or Maxwell, and we can award it no higher praise."—*Engineer.*

"Mr. Goodeve's text-book is a work of which every young engineer should possess himself." —*Mining Journal.*

ON GAS ENGINES.

With Appendix describing a Recent Engine with Tube Igniter. By T. M. GOODEVE, M.A. Crown 8vo, cloth **2/6**

"Like all Mr. Goodeve's writings, the present is no exception in point of general excellence. It is a valuable little volume."—*Mechanical World.*

A TREATISE ON STEAM BOILERS.

Their Strength, Construction, and Economical Working. By R. WILSON, C.E. Fifth Edition. 12mo, cloth **6/0**

"The best treatise that has ever been published on steam boilers."—*Engineer.*

"The author shows himself perfect master of his subject, and we heartily recommend all employing steam power to possess themselves of the work."—*Ryland's Iron Trade Circular.*

THE MECHANICAL ENGINEER'S COMPANION —

of Areas, Circumferences, Decimal Equivalents, in inches and feet, millimetres, squares, cubes, roots, &c.; Weights, Measures, and other Data. Also Practical Rules for Modern Engine Proportions. By R. EDWARDS, M.Inst.C.E. Fcap. 8vo, cloth. [*Just Published.* **3/6**

"A very useful little volume. It contains many tables, classified data and memoranda, generally useful to engineers."—*Engineer.*

"This small book is what it professes to be, viz.:—'a handy office companion,' giving as it does, in a succinct form, a variety of information likely to be required by mechanical engineers in their everyday office work."—*Nature.*

A HANDBOOK ON THE STEAM ENGINE.

With especial Reference to Small and Medium-sized Engines. For the Use of Engine Makers, Mechanical Draughtsmen, Engineering Students, and users of Steam Power. By HERMAN HAEDER, C.E. Translated from the German with considerable additions and alterations, by H. H. P. POWLES, A.M.I.C.E., M.I.M.E. Second Edition, Revised. With nearly 1,100 Illustrations. Crown 8vo, cloth **9/0**

"A perfect encyclopædia of the steam engine and its details, and one which must take a permanent place in English drawing-offices and workshops."—*A Foreman Pattern-maker.*

"This is an excellent book, and should be in the hands of all who are interested in the construction and design of medium-sized stationary engines. . . . A careful study of its contents and the arrangement of the sections leads to the conclusion that there is probably no other book like it in this country. The volume aims at showing the results of practical experience, and it certainly may claim a complete achievement of this idea."—*Nature.*

"There can be no question as to its value. We cordially commend it to all concerned in the design and construction of the steam engine."—*Mechanical World.*

BOILER AND FACTORY CHIMNEYS.

Their Draught-Power and Stability. With a chapter on *Lightning Conductors.* By ROBERT WILSON, A.I.C.E., Author of "A Treatise on Steam Boilers," &c. Crown 8vo, cloth **3/6**

"A valuable contribution to the literature of scientific building."—*The Builder.*

BOILER MAKER'S READY RECKONER & ASSISTANT.

With Examples of Practical Geometry and Templating, for the Use of Platers, Smiths, and Riveters. By JOHN COURTNEY, Edited by D. K. CLARK, M.I.C.E. Third Edition, 480 pp., with 140 Illustrations. Fcap. 8vo . **7/0**

"No workman or apprentice should be without this book."—*Iron Trade Circular.*

REFRIGERATING & ICE-MAKING MACHINERY.

A Descriptive Treatise for the Use of Persons Employing Refrigerating and Ice-Making Installations, and others. By A. J. WALLIS-TAYLER, A.-M. Inst. C.E. Second Edition, Revised and Enlarged. With Illustrations. Crown 8vo, cloth. [*Just Published.* **7/6**

"Practical, explicit, and profusely illustrated."—*Glasgow Herald.*

"We recommend the book, which gives the cost of various systems and illustrations showing details of parts of machinery and general arrangements of complete installations."—*Builder.*

"May be recommended as a useful description of the machinery, the processes, and of the facts, figures, and tabulated physics of refrigerating. It is one of the best compilations on the subject."—*Engineer.*

TEA MACHINERY AND TEA FACTORIES.

A Descriptive Treatise on the Mechanical Appliances required on Tea Plantations in the Preparation of Tea for the Market. By A. J. WALLIS-TAYLER, A.-M. Inst. C.E. With over 200 Illustrations. Medium 8vo, cloth. [*Nearly Ready. Price, about* **25/0**

ENGINEERING ESTIMATES, COSTS, AND ACCOUNTS.

A Guide to Commercial Engineering. With numerous examples of Estimates and Costs of Millwright Work, Miscellaneous Productions, Steam Engines and Steam Boilers; and a Section on the Preparation of Costs Accounts. By A GENERAL MANAGER. Second Edition. 8vo, cloth. [*Just Published.* **12/0**

"This is an excellent and very useful book, covering subject-matter in constant requisition in every factory and workshop. . . . The book is invaluable, not only to the young engineer, but also to the estimate department of every works."—*Builder.*

"We accord the work unqualified praise. The information is given in a plain, straightforward manner, and bears throughout evidence of the intimate practical acquaintance o the author with every phase of commercial engineering."—*Mechanical World.*

AERIAL OR WIRE-ROPE TRAMWAYS.

Their Construction and Management. By A. J. WALLIS-TAYLER, A.M.Inst.C.E. With 81 Illustrations. Crown 8vo, cloth. [*Just Published.* **7/6**

"This is in its way an excellent volume. Without going into the minutiæ of the subject, it yet lays before its readers a very good exposition of the various systems of rope transmission in use, and gives as well not a little valuable information about their working, repair, and management. We can safely recommend it as a useful general treatise on the subject."—*The Engineer.*

"Mr. Tayler has treated the subject as concisely as thoroughness would permit. The book will rank with the best on this useful topic, and we recommend it to those whose business is the transporting of minerals and goods."—*Mining Journal.*

MOTOR CARS OR POWER-CARRIAGES FOR COMMON ROADS.

By A. J. WALLIS-TAYLER, Assoc. Memb. Inst. C.E., Author of "Modern Cycles," &c. 212 pp., with 76 Illustrations. Crown 8vo, cloth . . **4/6**

"Mr. Wallis-Tayler's book is a welcome addition to the literature of the subject, as it is the production of an Engineer, and has not been written with a view to assist in the promotion of companies. . . . The book is clearly expressed throughout, and is just the sort of work that an engineer, thinking of turning his attention to motor-carriage work, would do well to read as a preliminary to starting operations."—*Engineering.*

PLATING AND BOILER MAKING.

A Practical Handbook for Workshop Operations. By JOSEPH G. HORNER, A.M.I.M.E. 380 pp. with 338 Illustrations. Crown 8vo, cloth . . **7/6**

"The latest production from the pen of this writer is characterised by that evidence of close acquaintance with workshop methods which will render the book exceedingly acceptable to the practical hand. We have no hesitation in commending the work as a serviceable and practical handbook on a subject which has not hitherto received much attention from those qualified to deal with it in a satisfactory manner."—*Mechanical World.*

PATTERN MAKING.

A Practical Treatise, embracing the Main Types of Engineering Construction, and including Gearing, both Hand and Machine-made, Engine Work, Sheaves and Pulleys, Pipes and Columns, Screws, Machine Parts, Pumps and Cocks, the Moulding of Patterns in Loam and Greensand, &c., together with the methods of estimating the weight of Castings; with an Appendix of Tables for Workshop Reference. By JOSEPH G. HORNER, A.M.I.M.E. Second Edition, Enlarged. With 450 Illustrations. Crown 8vo, cloth **7/6**

"A well-written technical guide, evidently written by a man who understands and has practised what he has written about. . . . We cordially recommend it to engineering students, young journeymen, and others desirous of being initiated into the mysteries of pattern-making."—*Builder.*

"More than 400 illustrations help to explain the text, which is, however, always clear and explicit, thus rendering the work an excellent *vade mecum* for the apprentice who desires to become master of his trade."—*English Mechanic.*

MECHANICAL ENGINEERING TERMS

(Lockwood's Dictionary of). Embracing those current in the Drawing Office, Pattern Shop, Foundry, Fitting, Turning, Smiths', and Boiler Shops, &c., &c. Comprising upwards of 6,000 Definitions. Edited by JOSEPH G. HORNER, A.M.I.M.E. Second Edition, Revised, with Additions. Crown 8vo, cloth **7/6**

"Just the sort of handy dictionary required by the various trades engaged in mechanical engineering. The practical engineering pupil will find the book of great value in his studies, and every foreman engineer and mechanic should have a copy."—*Building News.*

"Not merely a dictionary, but, to a certain extent, also a most valuable guide. It strikes us as a happy idea to combine with a definition of the phrase useful information on the subject of which it treats."—*Machinery Market.*

TOOTHED GEARING.

A Practical Handbook for Offices and Workshops. By JOSEPH HORNER, A.M.I.M.E. With 184 Illustrations. Crown 8vo, cloth . . . **6/0**

"We must give the book our unqualified praise for its thoroughness of treatment, and we can heartily recommend it to all interested as the most practical book on the subject yet written."—*Mechanical World.*

FIRES, FIRE-ENGINES, AND FIRE BRIGADES.

With a History of Fire-Engines, their Construction, Use, and Management; Foreign Fire Systems; Hints on Fire-Brigades, &c. By CHARLES F. T. YOUNG, C.E. 8vo, cloth . . . . **£1 4s.**

"To such of our readers as are interested in the subject of fires and fire apparatus we can most heartily commend this book.—*Engineering.*

STONE-WORKING MACHINERY.

A Manual dealing with the Rapid and Economical Conversion of Stone. With Hints on the Arrangement and Management of Stone Works. By M. Powis Bale, M.I.M.E. Second Edition, enlarged. With Illustrations. Crown 8vo, cloth. [*Just Published.* **9/0**

"The book should be in the hands of every mason or student of stonework."—*Colliery Guardian.*

"A capital handbook for all who manipulate stone for building or ornamental purposes."—*Machinery Market.*

PUMPS AND PUMPING.

A Handbook for Pump Users. Being Notes on Selection, Construction, and Management. By M. Powis Bale, M.I.M.E. Third Edition, Revised. Crown 8vo, cloth. [*Just Published.* **2/6**

"The matter is set forth as concisely as possible. In fact, condensation rather than diffuseness has been the author's aim throughout; yet he does not seem to have omitted anything likely to be of use."—*Journal of Gas Lighting.*

"Thoroughly practical and simply and clearly written."—*Glasgow Herald.*

MILLING MACHINES AND PROCESSES.

A Practical Treatise on Shaping Metals by Rotary Cutters. Including Information on Making and Grinding the Cutters. By Paul N. Hasluck, Author of "Lathe-Work." 352 pp. With upwards of 300 Engravings. Large crown 8vo, cloth **12/6**

"A new departure in engineering literature. . . . We can recommend this work to all interested in milling machines; it is what it professes to be—a practical treatise."—*Engineer.*

"A capital and reliable book which will no doubt be of considerable service both to those who are already acquainted with the process as well as to those who contemplate its adoption."—*Industries.*

LATHE-WORK.

A Practical Treatise on the Tools, Appliances, and Processes employed in the Art of Turning. By Paul N. Hasluck. Sixth Edition. Crown 8vo, cloth **5/0**

"Written by a man who knows not only how work ought to be done, but who also knows how to do it, and how to convey his knowledge to others. To all turners this book would be valuable."—*Engineering.*

"We can safely recommend the work to young engineers. To the amateur it will simply be invaluable. To the student it will convey a great deal of useful information."—*Engineer.*

SCREW-THREADS,

And Methods of Producing Them. With numerous Tables and complete Directions for using Screw-Cutting Lathes. By Paul N. Hasluck, Author of "Lathe-Work," &c. With Seventy-four Illustrations. Fourth Edition, Re-written and Enlarged. Waistcoat-pocket size **1/6**

"Full of useful information, hints and practical criticism. Taps, dies, and screwing tools generally are illustrated and their actions described."—*Mechanical World.*

"It is a complete compendium of all the details of the screw-cutting lathe; in fact a *multum-in-parvo* on all the subjects it treats upon."—*Carpenter and Builder.*

TABLES AND MEMORANDA FOR ENGINEERS, MECHANICS, ARCHITECTS, BUILDERS, &c.

Selected and Arranged by Francis Smith. Sixth Edition, Revised, including Electrical Tables, Formulæ, and Memoranda. Waistcoat-pocket size, limp leather. [*Just Published.* **1/6**

"It would, perhaps, be as difficult to make a small pocket-book selection of notes and formulæ to suit ALL engineers as it would be to make a universal medicine; but Mr. Smith's waistcoat-pocket collection may be looked upon as a successful attempt."—*Engineer.*

"The best example we have ever seen of 270 pages of useful matter packed into the dimensions of a card-case."—*Building News.* "A veritable pocket treasury of knowledge."—*Iron.*

POCKET GLOSSARY OF TECHNICAL TERMS.

English-French, French-English; with Tables suitable for the Architectural, Engineering, Manufacturing, and Nautical Professions. By John James Fletcher, Engineer and Surveyor. Second Edition, Revised and Enlarged, 200 pp. Waistcoat-pocket size, limp leather **1/6**

"It is a very great advantage for readers and correspondents in France and England to have so large a number of the words relating to engineering and manufacturers collected in a lilliputian volume. The little book will be useful both to students and travellers."—*Architect.*

"The glossary of terms is very complete, and many of the Tables are new and well arranged. We cordially commend the book."—*Mechanical World.*

THE ENGINEER'S YEAR BOOK FOR 1900.

Comprising Formulæ, Rules, Tables, Data and Memoranda in Civil, Mechanical, Electrical, Marine and Mine Engineering. By H. R. KEMPE, A.M. Inst. C.E., M.I.E.E., Technical Officer of the Engineer-in-Chief's Office, General Post Office, London, Author of "A Handbook of Electrical Testing." "The Electrical Engineer's Pocket-Book," &c. With about 1,000 Illustrations, specially Engraved for the work. Crown 8vo, 800 pp., leather. [*Just Published.* **8/0**

"Represents an enormous quantity of work, and forms a desirable book of reference."—*The Engineer.*

"The volume is distinctly in advance of most similar publications in this country."—*Engineering.*

"This valuable and well-designed book of reference meets the demands of all descriptions of engineers."—*Saturday Review.*

"Teems with up-to-date information in every branch of engineering and construction."—*Building News.*

"The needs of the engineering profession could hardly be supplied in a more admirable, complete and convenient form. To say that it more than sustains all comparisons is praise of the highest sort, and that may justly be said of it."—*Mining Journal.*

"There is certainly room for the newcomer, which supplies explanations and directions, as well as formulæ and tables. It deserves to become one of the most successful of the technical annuals."—*Architect.*

"Brings together with great skill all the technical information which an engineer has to use day by day. It is in every way admirably equipped, and is sure to prove successful."—*Scotsman.*

"The up-to-dateness of Mr. Kempe's compilation is a quality that will not be lost on the busy people for whom the work is intended."—*Glasgow Herald.*

THE PORTABLE ENGINE.

A Practical Manual on its Construction and Management. For the use of Owners and Users of Steam Engines generally. By WILLIAM DYSON WANSBROUGH. Crown 8vo, cloth **3/6**

"This is a work of value to those who use steam machinery. . . . Should be read by every one who has a steam engine, on a farm or elsewhere."—*Mark Lane Express.*

"We cordially commend this work to buyers and owners of steam-engines, and to those who have to do with their construction or use."—*Timber Trades Journal.*

"Such a general knowledge of the steam-engine as Mr. Wansbrough furnishes to the reader should be acquired by all intelligent owners and others who use the steam-engine."—*Building News.*

"An excellent text-book of this useful form of engine. The 'Hints to Purchasers' contain a good deal of common-sense and practical wisdom."—*English Mechanic.*

IRON AND STEEL.

A Work for the Forge, Foundry, Factory, and Office. Containing ready, useful, and trustworthy Information for Ironmasters and their Stock-takers; Managers of Bar, Rail, Plate, and Sheet Rolling Mills; Iron and Metal Founders; Iron Ship and Bridge Builders; Mechanical, Mining, and Consulting Engineers; Architects, Contractors, Builders, &c. By CHARLES HOARE, Author of "The Slide Rule," &c. Ninth Edition. 32mo, leather . **6/0**

"For comprehensiveness the book has not its equal."—*Iron.*

"One of the best of the pocket books."—*English Mechanic.*

CONDENSED MECHANICS.

A Selection of Formulæ, Rules, Tables, and Data or the Use of Engineering Students, Science Classes, &c. In accordance with the Requirements of the Science and Art Department. By W. G. CRAWFORD HUGHES, A.M.I.C.E. Crown 8vo, cloth **2/6**

"The book is well fitted or those who are either confronted with practical problems in their work, or are preparing for examination and wish to refresh their knowledge by going through their formulæ again."—*Marine Engineer.*

"It is well arranged, and meets the wants of those for whom it is intended."—*Railway News.*

THE SAFE USE OF STEAM.

Containing Rules for Unprofessional Steam Users. By an ENGINEER. Seventh Edition. Sewed . . . . **6D.**

"If steam-users would but learn this little book by heart, boiler explosions would become sensations by their rarity."—*English Mechanic.*

HEATING BY HOT WATER.

With Information and Suggestions on the best Methods of Heating Public, Private and Horticultural Buildings. By WALTER JONES. Second Edition. With 96 Illustrations, crown 8vo, cloth . . . . *Net* **2/6**

"We confidently recommend all interested in heating by hot water to secure a copy of this valuable little treatise."—*The Plumber and Decorator.*

THE LOCOMOTIVE ENGINE.

The Autobiography of an Old Locomotive Engine. By ROBERT WEATHERBURN, M.I.M.E. With Illustrations and Portraits of GEORGE and ROBERT STEPHENSON. Crown 8vo, cloth. [*Just Published. Net* **2/6**

SUMMARY OF CONTENTS:—PROLOGUE.—CYLINDERS.—MOTIONS.—CONNECTING RODS.—FRAMES.—WHEELS.—PUMPS, CLACKS, &c.—INJECTORS.—BOILERS.—SMOKE BOX.—CHIMNEY.—WEATHER BOARD AND AWNING.—INTERNAL DISSENSIONS.—ENGINE DRIVERS, &c.

"It would be difficult to imagine anything more ingeniously planned, more cleverly worked out, and more charmingly written. Readers cannot fail to find the volume most enjoyable."—*Glasgow Herald.*

THE LOCOMOTIVE ENGINE AND ITS DEVELOPMENT.

A Popular Treatise on the Gradual Improvements made in Railway Engines between 1803 and 1896. By CLEMENT E. STRETTON, C.E. Fifth Edition, Enlarged. With 120 Illustrations. Crown 8vo, cloth. [*Just Published.* **3/6**

"Students of railway history and all who are interested in the evolution of the modern locomotive will find much to attract and entertain in this volume."—*The Times.*

LOCOMOTIVE ENGINE DRIVING.

A Practical Manual for Engineers in Charge of Locomotive Engines. By MICHAEL REYNOLDS, Member of the Society of Engineers, formerly Locomotive Inspector, L. B. & S. C. R. Ninth Edition. Including a KEY TO THE LOCOMOTIVE ENGINE. Crown 8vo, cloth **4/6**

"Mr. Reynolds has supplied a want, and has supplied it well. We can confidently recommend the book not only to the practical driver, but to everyone who takes an interest in the performance of locomotive engines."—*The Engineer.*

"Mr. Reynolds has opened a new chapter in the literature of the day. His treatise is admirable."—*Athenæum.*

THE MODEL LOCOMOTIVE ENGINEER,

Fireman, and Engine-Boy. Comprising a Historical Notice of the Pioneer Locomotive Engines and their Inventors. By MICHAEL REYNOLDS. Second Edition, with Revised Appendix. Crown 8vo, cloth. [*Just Published.* **4/6**

"From the technical knowledge of the author, it will appeal to the railway man of to-day more forcibly than anything written by Dr. Smiles. . . . The volume contains information of a technical kind, and facts that every driver should be familiar with."—*English Mechanic.*

"We should be glad to see this book in the possession of everyone in the kingdom who has ever laid, or is to lay, hands on a locomotive engine."—*Iron.*

CONTINUOUS RAILWAY BRAKES.

A Practical Treatise on the several Systems in Use in the United Kingdom: their Construction and Performance. With copious Illustrations and numerous Tables. By MICHAEL REYNOLDS. 8vo, cloth **9/0**

"A popular explanation of the different brakes. It will be of great assistance in forming public opinion, and will be studied with benefit by those who take an interest in the brake."—*English Mechanic.*

STATIONARY ENGINE DRIVING.

A Practical Manual for Engineers in Charge of Stationary Engines. By MICHAEL REYNOLDS. Fifth Edition. Crown 8vo, cloth **4/6**

"The author is thoroughly acquainted with his subjects, and his advice on the various points treated is clear and practical. . . . He has produced a manual which is an exceedingly useful one for the class for whom it is specially intended."—*Engineering.*

"Our author leaves no stone unturned. He is determined that his readers shall not only know something about the stationary engine, but all about it."—*Engineer.*

ENGINE-DRIVING LIFE.

Stirring Adventures and Incidents in the Lives of Locomotive Engine-Drivers. By MICHAEL REYNOLDS. Third Edition. Crown 8vo, cloth . **1/6**

"Perfectly fascinating. Wilkie Collins's most thrilling conceptions are thrown into the shade by true incidents, endless in their variety, related in every page."—*North British Mail.*

THE ENGINEMAN'S POCKET COMPANION,

And Practical Educator for Enginemen, Boiler Attendants, and Mechanics. By MICHAEL REYNOLDS. With 45 Illustrations and numerous Diagrams. Third Edition, Revised. Royal 18mo, strongly bound for pocket wear . **3/6**

"This admirable work is well suited to accomplish its object, being the honest workmanship of a competent engineer."—*Glasgow Herald.*

CIVIL ENGINEERING, SURVEYING, &c.

LIGHT RAILWAYS FOR THE UNITED KINGDOM, INDIA, AND THE COLONIES.

A Practical Handbook setting forth the Principles on which Light Railways should be Constructed, Worked, and Financed; and detailing the Cost of Construction, Equipment, Revenue and Working Expenses of Local Railways already established in the above-mentioned countries, and in Belgium, France, Switzerland, &c. By J. C. MACKAY, F.G.S., A.M. Inst. C.E. Illustrated with Plates and Diagrams. Medium 8vo, cloth. [*Just Published.* **15/0**

"Mr. Mackay's volume is clearly and concisely written, admirably arranged, and freely illustrated. The book is exactly what has been long wanted. We recommend it to all interested in the subject. It is sure to have a wide sale."—*Railway News.*

"Those who desire to have within reach general information concerning almost all the light railway systems in the world will do well to buy Mr. Mackay's book."—*Engineer.*

"This work appears very opportunely, when the extension of the system on a large scale to England is at last being mooted. In its pages we find all the information that the heart of man can desire on the subject. . . . every detail in its story, founded on the experience of other countries and applied to the possibilities of England, is put before us."—*Spectator.*

PRACTICAL TUNNELLING.

Explaining in detail Setting-out the Works, Shaft-sinking, and Heading-driving, Ranging the Lines and Levelling underground, Sub-Excavating, Timbering and the Construction of the Brickwork of Tunnels, with the amount of Labour required for, and the Cost of, the various portions of the work. By FREDERICK W. SIMMS, M. Inst. C.E. Fourth Edition, Revised and Further Extended, including the most recent (1895) Examples of Sub-aqueous and other Tunnels, by D. KINNEAR CLARK, M. Inst. C.E. Imperial 8vo, with 34 Folding Plates and other Illustrations. Cloth. [*Just Published.* **£2 2s.**

"The present (1896) edition has been brought right up to date, and is thus rendered a work to which civil engineers generally should have ready access, and to which engineers who have construction work can hardly afford to be without, but which to the younger members of the profession is invaluable, as from its pages they can learn the state to which the science of tunnelling has attained."—*Railway News.*

"The estimation in which Mr. Simms's book has been held for many years cannot be more truly expressed than in the words of the late Prof. Rankine: 'The best source of information on the subject of tunnels is Mr. F. W. Simms's work on Practical Tunnelling.'"—*Architect.*

THE WATER SUPPLY OF TOWNS AND THE CONSTRUCTION OF WATER-WORKS.

A Practical Treatise for the Use of Engineers and Students of Engineering. By W. K. BURTON, A.M. Inst. C.E., Professor of Sanitary Engineering in the Imperial University, Tokyo, Japan, and Consulting Engineer to the Tokyo Water-works. Second Edition, Revised and Extended. With numerous Plates and Illustrations. Super-royal 8vo, buckram. [*Just Published.* **25/0**

I. INTRODUCTORY.—II. DIFFERENT QUALITIES OF WATER.—III. QUANTITY OF WATER TO BE PROVIDED.—IV. ON ASCERTAINING WHETHER A PROPOSED SOURCE OF SUPPLY IS SUFFICIENT.—V. ON ESTIMATING THE STORAGE CAPACITY REQUIRED TO BE PROVIDED.—VI. CLASSIFICATION OF WATER-WORKS.—VII. IMPOUNDING RESERVOIRS.—VIII. EARTHWORK DAMS.—IX. MASONRY DAMS.—X. THE PURIFICATION OF WATER.—XI. SETTLING RESERVOIRS.—XII. SAND FILTRATION.—XIII. PURIFICATION OF WATER BY ACTION OF IRON, SOFTENING OF WATER BY ACTION OF LIME, NATURAL FILTRATION.—XIV. SERVICE OR CLEAN WATER RESERVOIRS—WATER TOWERS—STAND PIPES.—XV. THE CONNECTION OF SETTLING RESERVOIRS, FILTER BEDS AND SERVICE RESERVOIRS.—XVI. PUMPING MACHINERY.—XVII. FLOW OF WATER IN CONDUITS—PIPES AND OPEN CHANNELS.—XVIII. DISTRIBUTION SYSTEMS.—XIX. SPECIAL PROVISIONS FOR THE EXTINCTION OF FIRE.—XX. PIPES FOR WATER-WORKS.—XXI. PREVENTION OF WASTE OF WATER.—XXII. VARIOUS APPLICATIONS USED IN CONNECTION WITH WATER-WORKS.

APPENDIX I. By PROF. JOHN MILNE, F.R.S.—CONSIDERATIONS CONCERNING THE PROBABLE EFFECTS OF EARTHQUAKES ON WATER-WORKS, AND THE SPECIAL PRECAUTIONS TO BE TAKEN IN EARTHQUAKE COUNTRIES.

APPENDIX II. By JOHN DE RIJKE, C.E.—ON SAND DUNES AND DUNE SAND AS A SOURCE OF WATER SUPPLY.

"The chapter upon filtration of water is very complete, and the details of construction well illustrated. . . . The work should be specially valuable to civil engineers engaged in work in Japan, but the interest is by no means confined to that locality."—*Engineer.*

"We congratulate the author upon the practical commonsense shown in the preparation of this work. . . . The plates and diagrams have evidently been prepared with great care, and cannot fail to be of great assistance to the student."—*Builder.*

"The whole art of water-works construction is dealt with in a clear and comprehensive fashion in this handsome volume. . . . Mr. Burton's practical treatise shows in all its sections the fruit of independent study and individual experience. It is largely based upon his own practice in the branch of engineering of which it treats."—*Saturday Review.*

THE WATER SUPPLY OF CITIES AND TOWNS.

By WILLIAM HUMBER, A. M. Inst. C.E., and M. Inst. M.E., Author of "Cast and Wrought Iron Bridge Construction," &c., &c. Illustrated with 50 Double Plates, 1 Single Plate, Coloured Frontispiece, and upwards of 250 Woodcuts, and containing 400 pp. of Text. Imp. 4to, elegantly and substantially half-bound in morocco . . . . *Net* **£6 6s.**

LIST OF CONTENTS.

I. HISTORICAL SKETCH OF SOME OF THE MEANS THAT HAVE BEEN ADOPTED FOR THE SUPPLY OF WATER TO CITIES AND TOWNS.—II. WATER AND THE FOREIGN MATTER USUALLY ASSOCIATED WITH IT.—III. RAINFALL AND EVAPORATION.—IV. SPRINGS AND THE WATER-BEARING FORMATIONS OF VARIOUS DISTRICTS.—V. MEASUREMENT AND ESTIMATION OF THE FLOW OF WATER.—VI. ON THE SELECTION OF THE SOURCE OF SUPPLY.—VII. WELLS.—VIII. RESERVOIRS.—IX. THE PURIFICATION OF WATER.—X. PUMPS.—XI. PUMPING MACHINERY.—XII. CONDUITS.—XIII. DISTRIBUTION OF WATER.—XIV. METERS, SERVICE PIPES, AND HOUSE FITTINGS.—XV. THE LAW OF ECONOMY OF WATER-WORKS.—XVI. CONSTANT AND INTERMITTENT SUPPLY.—XVII. DESCRIPTION OF PLATES.—APPENDICES, GIVING TABLES OF RATES OF SUPPLY, VELOCITIES, &c., &c., TOGETHER WITH SPECIFICATIONS OF SEVERAL WORKS ILLUSTRATED, AMONG WHICH WILL BE FOUND: ABERDEEN, BIDEFORD, CANTERBURY, DUNDEE, HALIFAX, LAMBETH, ROTHERHAM, DUBLIN, AND OTHERS.

"The most systematic and valuable work upon water supply hitherto produced in English, or in any other language. . . . Mr. Humber's work is characterised almost throughout by an exhaustiveness much more distinctive of French and German than of English technical treatises."—*Engineer.*

RURAL WATER SUPPLY.

A Practical Handbook on the Supply of Water and Construction of Waterworks for small Country Districts. By ALLAN GREENWELL, A.M.I.C.E., and W. T. CURRY, A.M.I.C.E., F.G.S. With Illustrations. Second Edition, Revised. Crown 8vo, cloth. [*Just Published.* **5/0**

"We conscientiously recommend it as a very useful book for those concerned in obtaining water for small districts, giving a great deal of practical information in a small compass."—*Builder.*

"The volume contains valuable information upon all matters connected with water supply. . . . It is full of details on points which are continually before water-works engineers."—*Nature.*

HYDRAULIC POWER ENGINEERING.

A Practical Manual on the Concentration and Transmission of Power by Hydraulic Machinery. By G. CROYDON MARKS, A.M. Inst. C.E. With nearly 200 Illustrations. 8vo, cloth. [*Just Published. Net* **9/0**

SUMMARY OF CONTENTS:—PRINCIPLES OF HYDRAULICS.—THE OBSERVED FLOW OF WATER.—HYDRAULIC PRESSURES, MATERIAL.—TEST LOAD PACKINGS FOR SLIDING SURFACES.—PIPE JOINTS.—CONTROLLING VALVES.—PLATFORM LIFTS.—WORKSHOP, FACTORY, AND DOCK CRANES.—HYDRAULIC ACCUMULATORS.—PRESSES.—SHEET METAL WORKING AND FORGING MACHINERY.—HYDRAULIC RIVETTERS.—HAND, POWER, AND STEAM PUMPS.—TURBINES.—IMPULSE AND RE-ACTION TURBINES.—DESIGN OF TURBINES.—WATER WHEELS.—HYDRAULIC ENGINES.—RECENT ACHIEVEMENTS.—APPENDIX OF TABLES.

HYDRAULIC TABLES, CO-EFFICIENTS, & FORMULÆ.

For Finding the Discharge of Water from Orifices, Notches, Weirs, Pipes, and Rivers. With New Formulæ, Tables, and General Information on Rain-fall, Catchment-Basins, Drainage, Sewerage, Water Supply for Towns and Mill Power. By JOHN NEVILLE, Civil Engineer, M.R.I.A. Third Edition, revised, with additions. Numerous Illustrations. Crown 8vo, cloth . **14/0**

"It is, of all English books on the subject, the one nearest to completeness."—*Architect.*

HYDRAULIC MANUAL.

Consisting of Working Tables and Explanatory Text. Intended as a Guide in Hydraulic Calculations and Field Operations. By LOWIS D'A. JACKSON, Author of "Aid to Survey Practice," "Modern Metrology," &c. Fourth Edition, Enlarged. Large crown 8vo, cloth **16/0**

"The author has constructed a manual which may be accepted as a trustworthy guide to this branch of the engineer's profession."—*Engineering.*

WATER ENGINEERING.

A Practical Treatise on the Measurement, Storage, Conveyance, and Utilisation of Water for the Supply of Towns, for Mill Power, and for other Purposes. By C. SLAGG, A. M. Inst. C.E. Second Edition. Crown 8vo, cloth . **7/6**

"As a small practical treatise on the water supply of towns, and on some applications of water-power, the work is in many respects excellent."—*Engineering.*

EMBANKMENT AND RECLAMATION OF LAND.

A Practical Handbook for the use of Engineers. By ALEX. BEAZELEY, M. Inst. C.E. Crown 8vo, cloth. [*Just Published.* *Net* **7/6**

MASONRY DAMS FROM INCEPTION TO COMPLETION.

Including numerous Formulæ, Forms of Specification and Tender, Pocket Diagram of Forces, &c. For the use of Civil and Mining Engineers. By C. F. COURTNEY, M. Inst. C.E. 8vo, cloth. [*Just Published.* **9/0**

"The volume contains a good deal of valuable data, and furnishes the engineer with practical advice. The author deals with his subject from the inception to the finish. Many useful suggestions will be found in the remarks on site and position, location of dam, foundations and construction."—*Building News.*

RIVER BARS.

The Causes of their Formation, and their Treatment by "Induced Tidal Scour;" with a Description of the Successful Reduction by this Method of the Bar at Dublin. By I. J. MANN, Assist. Eng. to the Dublin Port and Docks Board. Royal 8vo, cloth **7/6**

"We recommend all interested in harbour works—and, indeed, those concerned in the improvements of rivers generally—to read Mr. Mann's interesting work."—*Engineer.*

TRAMWAYS: THEIR CONSTRUCTION AND WORKING.

Embracing a Comprehensive History of the System; with an exhaustive Analysis of the Various Modes of Traction, including Horse Power, Steam, Cable Traction, Electric Traction, &c.; a Description of the Varieties of Rolling Stock; and ample Details of Cost and Working Expenses. New Edition, Thoroughly Revised, and Including the Progress recently made in Tramway Construction, &c., &c. By D. KINNEAR CLARK, M. Inst. C.E. With 400 Illustrations. 8vo, 780 pp., buckram. [*Just Published.* **28/0**

"Although described as a new edition, this book is really a new one, a large part of it, which covers historical ground, having been re-written and amplified; while the parts which relate to all that has been done since 1882 appear in this edition only. It is sixteen years since the first edition appeared, and twelve years since the supplementary volume to the first book was published. After a lapse, then, of twelve years, it is obvious that the author has at his disposal a vast quantity of descriptive and statistical information, with which he may, and has, produced a volume of great value to all interested in tramway construction and working. The new volume is one which will rank, among tramway engineers and those interested in tramway working, with his world-famed book on railway machinery."—*The Engineer.*

PRACTICAL SURVEYING.

A Text-Book for Students preparing for Examinations or for Survey-work in the Colonies. By GEORGE W. USILL, A.M.I.C.E. With 4 Plates and upwards of 330 Illustrations. Sixth Edition. Including Tables of Natural Sines, Tangents, Secants, &c. Crown 8vo, cloth **7/6**; or, on THIN PAPER, leather, gilt edges, for pocket use. [*Just Published.* **12/6**

"The best forms of instruments are described as to their construction, uses and modes of employment, and there are innumerable hints on work and equipment such as the author, in his experience as surveyor, draughtsman and teacher, has found necessary, and which the student in his inexperience will find most serviceable."—*Engineer.*

"The latest treatise in the English language on surveying, and we have no hesitation in saying that the student will find it a better guide than any of its predecessors. Deserves to be recognised as the first book which should be put in the hands of a pupil of Civil Engineering."—*Architect.*

SURVEYING WITH THE TACHEOMETER.

A practical Manual for the use of Civil and Military Engineers and Surveyors. Including two series of Tables specially computed for the Reduction of Readings from Sexagesimal and from Centesimal Degrees. By NEIL KENNEDY, M. Inst. C.E. Demy 8vo, with Diagrams and Plates.
[*In the Press.* *Price, about* **10/6** *Net.*

AID TO SURVEY PRACTICE.

For Reference in Surveying, Levelling, and Setting-out; and in Route Surveys of Travellers by Land and Sea. With Tables, Illustrations, and Records. By LOWIS D'A. JACKSON, A.M.I.C.E. 8vo, cloth **12/6**

"A valuable *vade-mecum* for the surveyor. We recommend this book as containing an admirable supplement to the teaching of the accomplished surveyor."—*Athenæum.*

"The author brings to his work a fortunate union of theory and practical experience which, aided by a clear and lucid style of writing, renders the book a very useful one."—*Builder.*

ENGINEER'S & MINING SURVEYOR'S FIELD BOOK.

Consisting of a Series of Tables, with Rules, Explanations of Systems, and use of Theodolite for Traverse Surveying and plotting the work with minute accuracy by means of Straight Edge and Set Square only; Levelling with the Theodolite, Casting-out and Reducing Levels to Datum, and Plotting Sections in the ordinary manner; Setting-out Curves with the Theodolite by Tangential Angles and Multiples with Right and Left-hand Readings of the Instrument; Setting-out Curves without Theodolite on the System of Tangential Angles by Sets of Tangents and Offsets; and Earthwork Tables to 80 feet deep, calculated for every 6 inches in depth. By W. DAVIS HASKOLL, C.E. With numerous Woodcuts. Fourth Edition, Enlarged. Crown 8vo, cloth . **12/0**

"The book is very handy; the separate tables of sines and tangents to every minute will make it useful for many other purposes, the genuine traverse tables existing all the same."—*Athenæum.*

"Every person engaged in engineering field operations will estimate the importance of such a work and the amount of valuable time which will be saved by reference to a set of reliable tables prepared with the accuracy and fulness of those given in this volume."—*Railway News.*

LAND AND MARINE SURVEYING.

In Reference to the Preparation of Plans for Roads and Railways; Canals, Rivers, Towns' Water Supplies; Docks and Harbours. With Description and Use of Surveying Instruments. By W. DAVIS HASKOLL, C.E. Second Edition, Revised, with Additions. Large crown 8vo, cloth . . . **9/0**

"This book must prove of great value to the student. We have no hesitation in recommending it, feeling assured that it will more than repay a careful study."—*Mechanical World.*

"A most useful book for the student. We strongly recommend it as a carefully-written and valuable text-book. It enjoys a well-deserved repute among surveyors."—*Builder.*

"This volume cannot fail to prove of the utmost practical utility. It may be safely recommended to all students who aspire to become clean and expert surveyors."—*Mining Journal.*

PRINCIPLES AND PRACTICE OF LEVELLING.

Showing its Application to Purposes of Railway and Civil Engineering in the Construction of Roads; with Mr. TELFORD'S Rules for the same. By FREDERICK W. SIMMS, F.G.S., M. Inst. C.E. Eighth Edition, with the addition of LAW'S Practical Examples for Setting-out Railway Curves, and TRAUTWINE'S Field Practice of Laying-out Circular Curves. With 7 Plates and numerous Woodcuts, 8vo, cloth **8/6**

*** TRAUTWINE on CURVES may be had separate **5/0**

"The text-book on levelling in most of our engineering schools and colleges."—*Engineer.*

"The publishers have rendered a substantial service to the profession, especially to the younger members, by bringing out the present edition of Mr. Simms's useful work."—*Engineering.*

AN OUTLINE OF THE METHOD OF CONDUCTING A TRIGONOMETRICAL SURVEY.

For the Formation of Geographical and Topographical Maps and Plans, Military Reconnaissance, LEVELLING, &c., with Useful Problems, Formulæ, and Tables. By Lieut.-General FROME, R.E. Fourth Edition, Revised and partly Re-written by Major-General Sir CHARLES WARREN, G.C.M.G., R.E. With 19 Plates and 115 Woodcuts, royal 8vo, cloth **16/0**

"No words of praise from us can strengthen the position so well and so steadily maintained by this work. Sir Charles Warren has revised the entire work, and made such additions as were necessary to bring every portion of the contents up to the present date."—*Broad Arrow.*

TABLES OF TANGENTIAL ANGLES AND MULTIPLES FOR SETTING-OUT CURVES.

From 5 to 200 Radius. By A. BEAZELEY, M. Inst. C.E. 6th Edition, Revised. With an Appendix on the use of the Tables for Measuring up Curves. Printed on 50 Cards, and sold in a cloth box, waistcoat-pocket size. [*Just Published.* **3/6**

"Each table is printed on a card, which, placed on the theodolite leaves the hands free to manipulate the instrument—no small advantage as regards the rapidity of work."—*Engineer.*

"Very handy; a man may know that all his day's work must fall on two of these cards, which he puts into his own card-case, and leaves the rest behind."—*Athenæum.*

HANDY GENERAL EARTH-WORK TABLES.

Giving the Contents in Cubic Yards of Centre and Slopes of Cuttings and Embankments from 3 inches to 80 feet in Depth or Height, for use with either 66 feet Chain or 100 feet Chain. By J. H. WATSON BUCK, M. Inst. C.E. On a Sheet mounted in cloth case. [*Just Published* **3/6**

EARTHWORK TABLES.

Showing the Contents in Cubic Yards of Embankments, Cuttings, &c., of Heights or Depths up to an average of 80 feet. By JOSEPH BROADBENT, C.E., and FRANCIS CAMPIN, C.E. Crown 8vo, cloth **5/0**

"The way in which accuracy is attained, by a simple division of each cross section into three elements, two in which are constant and one variable, is ingenious."—*Athenæum.*

A MANUAL ON EARTHWORK.

By ALEX. J. S. GRAHAM, C.E. With numerous Diagrams. Second Edition. 18mo, cloth **2/6**

THE CONSTRUCTION OF LARGE TUNNEL SHAFTS.

A Practical and Theoretical Essay. By J. H. WATSON BUCK, M. Inst. C.E., Resident Engineer, L. and N. W. R. With Folding Plates, 8vo, cloth **12/0**

"Many of the methods given are of extreme practical value to the mason, and the observations on the form of arch, the rules for ordering the stone, and the construction of the templates, will be found of considerable use. We commend the book to the engineering profession."—*Building News.*

"Will be regarded by civil engineers as of the utmost value, and calculated to save much time and obviate many mistakes."—*Colliery Guardian.*

CAST & WROUGHT IRON BRIDGE CONSTRUCTION

(A Complete and Practical Treatise on), including Iron Foundations. In Three Parts.—Theoretical, Practical, and Descriptive. By WILLIAM HUMBER, A. M. Inst. C.E., and M. Inst. M.E. Third Edition, revised and much improved, with 115 Double Plates (20 of which now first appear in this edition), and numerous Additions to the Text. In 2 vols., imp. 4to, half-bound in morocco . . . . **£6 16s. 6d.**

"A very valuable contribution to the standard literature of civil engineering. In addition to elevations, plans, and sections, large scale details are given, which very much enhance the instructive worth of those illustrations."—*Civil Engineer and Architect's Journal.*

"Mr. Humber's stately volumes, lately issued—in which the most important bridges erected during the last five years, under the direction of the late Mr. Brunel, Sir W. Cubitt, Mr. Hawkshaw, Mr. Page, Mr. Fowler, Mr. Hemans, and others among our most eminent engineers, are drawn and specified in great detail."—*Engineer.*

ESSAY ON OBLIQUE BRIDGES

(Practical and Theoretical). With 13 large Plates. By the late GEORGE WATSON BUCK, M.I.C.E. Fourth Edition, revised by his Son, J. H. WATSON BUCK, M.I.C.E.; and with the addition of Description to Diagrams for Facilitating the Construction of Oblique Bridges, by W. H. BARLOW, M.I.C.E. Royal 8vo, cloth **12/0**

"The standard text-book for all engineers regarding skew arches is Mr. Buck's treatise, and it would be impossible to consult a better."—*Engineer.*

"Mr. Buck's treatise is recognised as a standard text-book, and his treatment has divested the subject of many of the intricacies supposed to belong to it. As a guide to the engineer and architect, on a confessedly difficult subject, Mr. Buck's work is unsurpassed."—*Building News.*

THE CONSTRUCTION OF OBLIQUE ARCHES

(A Practical Treatise on). By JOHN HART. Third Edition, with Plates. Imperial 8vo, cloth **8/0**

GRAPHIC AND ANALYTIC STATICS.

In their Practical Application to the Treatment of Stresses in Roofs, Solid Girders, Lattice, Bowstring, and Suspension Bridges, Braced Iron Arches and Piers, and other Frameworks. By R. HUDSON GRAHAM, C.E. Containing Diagrams and Plates to Scale. With numerous Examples, many taken from existing Structures. Specially arranged for Class-work in Colleges and Universities. Second Edition, Revised and Enlarged. 8vo, cloth . **16/0**

"Mr. Graham's book will find a place wherever graphic and analytic statics are used or studied."—*Engineer.*

"The work is excellent from a practical point of view, and has evidently been prepared with much care. The directions for working are simple, and are illustrated by an abundance of well-selected examples. It is an excellent text-book for the practical draughtsman."—*Athenæum.*

WEIGHTS OF WROUGHT IRON & STEEL GIRDERS.

A Graphic Table for Facilitating the Computation of the Weights of Wrought Iron and Steel Girders, &c., for Parliamentary and other Estimates. By J. H. WATSON BUCK, M. Inst. C.E. On a Sheet **2/6**

PRACTICAL GEOMETRY.

For the Architect, Engineer, and Mechanic. Giving Rules for the Delineation and Application of various Geometrical Lines, Figures, and Curves. By E. W. TARN, M.A., Architect. 8vo, cloth 9/0

"No book with the same objects in view has ever been published in which the clearness of the rules laid down and the illustrative diagrams have been so satisfactory."—*Scotsman.*

THE GEOMETRY OF COMPASSES.

Or, Problems Resolved by the mere Description of Circles and the Use of Coloured Diagrams and Symbols. By OLIVER BYRNE. Coloured Plates. Crown 8vo, cloth 3/6

HANDY BOOK FOR THE CALCULATION OF STRAINS

In Girders and Similar Structures and their Strength. Consisting of Formulæ and Corresponding Diagrams, with numerous details for Practical Application, &c. By WILLIAM HUMBER, A. M. Inst. C.E., &c. Fifth Edition. Crown 8vo, with nearly 100 Woodcuts and 3 Plates, cloth 7/6

"The formulæ are neatly expressed, and the diagrams good."—*Athenæum.*

"We heartily commend this really *handy* book to our engineer and architect readers."—*English Mechanic.*

TRUSSES OF WOOD AND IRON.

Practical Applications of Science in Determining the Stresses, Breaking Weights, Safe Loads, Scantlings, and Details of Construction. With Complete Working Drawings. By WILLIAM GRIFFITHS, Surveyor. 8vo, cloth. 4/6

"This handy little book enters so minutely into every detail connected with the construction of roof trusses that no student need be ignorant of these matters."—*Practical Engineer.*

THE STRAINS ON STRUCTURES OF IRONWORK.

With Practical Remarks on Iron Construction. By F. W. SHEILDS, M.I.C.E. 8vo, cloth 5/0

A TREATISE ON THE STRENGTH OF MATERIALS.

With Rules for Application in Architecture, the Construction of Suspension Bridges, Railways, &c. By PETER BARLOW, F.R.S. A new Edition, revised by his Sons, P. W. BARLOW, F.R.S., and W. H. BARLOW, F.R.S.; to which are added, Experiments by HODGKINSON, FAIRBAIRN, and KIRKALDY; and Formulæ for calculating Girders, &c. Arranged and Edited by WM. HUMBER, A. M. Inst. C.E. 8vo, cloth 18/0

"Valuable alike to the student, tyro, and the experienced practitioner, it will always rank in future as it has hitherto done, as the standard treatise on that particular subject."—*Engineer.*

"As a scientific work of the first class, it deserves a foremost place on the bookshelves of every civil engineer and practical mechanic."—*English Mechanic.*

STRENGTH OF CAST IRON AND OTHER METALS.

By THOMAS TREDGOLD, C.E. Fifth Edition, including HODGKINSON'S Experimental Researches. 8vo, cloth 12/0

SAFE RAILWAY WORKING.

A Treatise on Railway Accidents, their Cause and Prevention; with a Description of Modern Appliances and Systems. By CLEMENT E. STRETTON, C.E., Vice-President and Consulting Engineer, Amalgamated Society of Railway Servants. With Illustrations and Coloured Plates. Third Edition, Enlarged. Crown 8vo, cloth 3/6

"A book for the engineer, the directors, the managers; and, in short, all who wish for information on railway matters will find a perfect encyclopædia in 'Safe Rai way Working.'"—*Railway Review.*

"We commend the remarks on railway signalling to all railway managers, especially where a uniform code and practice is advocated."—*Herepath's Railway Journal.*

EXPANSION OF STRUCTURES BY HEAT.

By JOHN KEILY, C.E., late of the Indian Public Works Department. Crown 8vo, cloth 3/6

"The aim the author has set before him, viz., to show the effects of heat upon metallic and other structures, is a laudable one, for this is a branch of physics upon which the engineer or architect can find but little reliable and comprehensive data in books."—*Builder.*

THE PROGRESS OF MODERN ENGINEERING.

Complete in Four Volumes, imperial 4to, half-morocco, price **£12 12s.**
Each volume sold separately, as follows:—

FIRST SERIES, Comprising Civil, Mechanical, Marine, Hydraulic, Railway, Bridge, and other Engineering Works, &c. By WILLIAM HUMBER, A. M. Inst. C.E., &c. Imp. 4to, with 36 Double Plates, drawn to a large scale, Photographic Portrait of John Hawkshaw, C.E., F.R.S., &c., and copious descriptive Letterpress, Specifications, &c. Half-morocco . . **£3 3s.**

LIST OF THE PLATES AND DIAGRAMS.

VICTORIA STATION AND ROOF, L. B. & S. C. R. (8 PLATES); SOUTHPORT PIER (2 PLATES); VICTORIA STATION AND ROOF, L. C. & D. AND G. W. R. (6 PLATES); ROOF OF CREMORNE MUSIC HALL; BRIDGE OVER G. N. RAILWAY; ROOF OF STATION, DUTCH RHENISH RAIL. (2 PLATES); BRIDGE OVER THE THAMES, WEST LONDON EXTENSION RAILWAY (5 PLATES); ARMOUR PLATES: SUSPENSION BRIDGE, THAMES (4 PLATES); THE ALLEN ENGINE; SUSPENSION BRIDGE, AVON (3 PLATES); UNDERGROUND RAILWAY (3 PLATES).

HUMBER'S MODERN ENGINEERING.

SECOND SERIES. Imp. 4to, with 3 Double Plates, Photographic Portrait of Robert Stephenson, C.E., M.P., F.R.S., &c., and copious descriptive Letterpress, Specifications, &c. Half-morocco . . . . **£3 3s.**

LIST OF THE PLATES AND DIAGRAMS.

BIRKENHEAD DOCKS, LOW WATER BASIN (15 PLATES); CHARING CROSS STATION ROOF, C. C. RAILWAY (3 PLATES); DIGSWELL VIADUCT, GREAT NORTHERN RAILWAY; ROBBERY WOOD VIADUCT, GREAT NORTHERN RAILWAY; IRON PERMANENT WAY; CLYDACH VIADUCT, MERTHYR, TREDEGAR, AND ABERGAVENNY RAILWAY; EBBW VIADUCT, MERTHYR, TREDEGAR, AND ABERGAVENNY RAILWAY; COLLEGE WOOD VIADUCT, CORNWALL RAILWAY; DUBLIN WINTER PALACE ROOF (3 PLATES); BRIDGE OVER THE THAMES, L. C. & D. RAILWAY (6 PLATES); ALBERT HARBOUR, GREENOCK (4 PLATES).

HUMBER'S MODERN ENGINEERING.

THIRD SERIES. Imp. 4to, with 40 Double Plates, Photographic Portrait of J. R. M'Clean, late Pres. Inst. C.E., and copious descriptive Letterpress, Specifications, &c. Half-morocco . . . . **£3 3s.**

LIST OF THE PLATES AND DIAGRAMS.

MAIN DRAINAGE, METROPOLIS.—*North Side.*—MAP SHOWING INTERCEPTION OF SEWERS; MIDDLE LEVEL SEWER (2 PLATES); OUTFALL SEWER, BRIDGE OVER RIVER LEA (3 PLATES); OUTFALL SEWER, BRIDGE OVER MARSH LANE, NORTH WOOLWICH RAILWAY, AND BOW AND BARKING RAILWAY JUNCTION; OUTFALL SEWER, BRIDGE OVER BOW AND BARKING RAILWAY (3 PLATES); OUTFALL SEWER, BRIDGE OVER EAST LONDON WATER-WORKS' FEEDER (2 PLATES); OUTFALL SEWER RESERVOIR (2 PLATES); OUTFALL SEWER, TUMBLING BAY AND OUTLET; OUTFALL SEWER, PENSTOCKS. *South Side.*—OUTFALL SEWER, BERMONDSEY BRANCH (2 PLATES); OUTFALL SEWER, RESERVOIR AND OUTLET (4 PLATES); OUTFALL SEWER, FILTH HOIST; SECTIONS OF SEWERS (NORTH AND SOUTH SIDES).

THAMES EMBANKMENT.—SECTION OF RIVER WALL; STEAMBOAT PIER, WESTMINSTER (2 PLATES); LANDING STAIRS BETWEEN CHARING CROSS AND WATERLOO BRIDGES; YORK GATE (2 PLATES); OVERFLOW AND OUTLET AT SAVOY STREET SEWER (3 PLATES); STEAMBOAT PIER, WATERLOO BRIDGE (3 PLATES); JUNCTION OF SEWERS, PLANS AND SECTIONS; GULLIES, PLANS AND SECTIONS; ROLLING STOCK; GRANITE AND IRON FORTS.

HUMBER'S MODERN ENGINEERING.

FOURTH SERIES. Imp. 4to, with 36 Double Plates, Photographic Portrait of John Fowler, late Pres. Inst. C.E., and copious descriptive Letterpress, Specifications, &c. Half-morocco . . . . **£3 3s.**

LIST OF THE PLATES AND DIAGRAMS.

ABBEY MILLS PUMPING STATION, MAIN DRAINAGE, METROPOLIS (4 PLATES); BARROW DOCKS (5 PLATES); MANQUIS VIADUCT, SANTIAGO AND VALPARAISO RAILWAY, (2 PLATES); ADAM'S LOCOMOTIVE, ST. HELEN'S CANAL RAILWAY (2 PLATES); CANNON STREET STATION ROOF, CHARING CROSS RAILWAY (3 PLATES); ROAD BRIDGE OVER THE RIVER MOKA (2 PLATES); TELEGRAPHIC APPARATUS FOR MESOPOTAMIA; VIADUCT OVER THE RIVER WYE, MIDLAND RAILWAY (3 PLATES); ST. GERMANS VIADUCT, CORNWALL RAILWAY (2 PLATES); WROUGHT-IRON CYLINDER FOR DIVING BELL; MILLWALL DOCKS (6 PLATES); MILROY'S PATENT EXCAVATOR; METROPOLITAN DISTRICT RAILWAY (6 PLATES); HARBOURS, PORTS, AND BREAKWATERS (3 PLATES).

MARINE ENGINEERING, SHIPBUILDING, NAVIGATION, &c.

THE NAVAL ARCHITECT'S AND SHIPBUILDER'S POCKET-BOOK

of Formulæ, Rules, and Tables, and Marine Engineer's and Surveyor's Handy Book of Reference. By CLEMENT MACKROW, M.I.N.A. Seventh Edition, 700 pp., with 300 Illustrations. Fcap., leather . . **12/6**

SUMMARY OF CONTENTS:—SIGNS AND SYMBOLS, DECIMAL FRACTIONS.—TRIGONOMETRY.—PRACTICAL GEOMETRY.—MENSURATION.—CENTRES AND MOMENTS OF FIGURES.—MOMENTS OF INERTIA AND RADII OF GYRATION.—ALGEBRAICAL EXPRESSIONS FOR SIMPSON'S RULES.—MECHANICAL PRINCIPLES.—CENTRE OF GRAVITY.—LAWS OF MOTION.—DISPLACEMENT, CENTRE OF BUOYANCY.—CENTRE OF GRAVITY OF SHIP'S HULL.—STABILITY CURVES AND METACENTRES.—SEA AND SHALLOW-WATER WAVES.—ROLLING OF SHIPS.—PROPULSION AND RESISTANCE OF VESSELS.—SPEED TRIALS.—SAILING, CENTRE OF EFFORT.—DISTANCES DOWN RIVERS, COAST LINES.—STEERING AND RUDDERS OF VESSELS.—LAUNCHING CALCULATIONS AND VELOCITIES.—WEIGHT OF MATERIAL AND GEAR.—GUN PARTICULARS AND WEIGHT.—STANDARD GAUGES.—RIVETED JOINTS AND RIVETING.—STRENGTH AND TESTS OF MATERIALS.—BINDING AND SHEARING STRESSES, &c.—STRENGTH OF SHAFTING, PILLARS, WHEELS, &c.—HYDRAULIC DATA, &c.—CONIC SECTIONS, CATENARIAN CURVES.—MECHANICAL POWERS, WORK.—BOARD OF TRADE REGULATIONS FOR BOILERS AND ENGINES.—BOARD OF TRADE REGULATIONS FOR SHIPS.—LLOYD'S RULES FOR BOILERS.—LLOYD'S WEIGHT OF CHAINS.—LLOYD'S SCANTLINGS FOR SHIPS.—DATA OF ENGINES AND VESSELS.—SHIPS' FITTINGS AND TESTS.—SEASONING PRESERVING TIMBER.—MEASUREMENT OF TIMBER.—ALLOYS, PAINTS, VARNISHES.—DATA FOR STOWAGE.—ADMIRALTY TRANSPORT REGULATIONS.—RULES FOR HORSE-POWER, SCREW PROPELLERS, &c.—PERCENTAGES FOR BUTT STRAPS, &c.—PARTICULARS OF YACHTS.—MASTING AND RIGGING VESSELS.—DISTANCES OF FOREIGN PORTS.—TONNAGE TABLES.—VOCABULARY OF FRENCH AND ENGLISH TERMS.—ENGLISH WEIGHTS AND MEASURES.—FOREIGN WEIGHTS AND MEASURES.—DECIMAL EQUIVALENTS.—FOREIGN MONEY.—DISCOUNT AND WAGES TABLES.—USEFUL NUMBERS AND READY RECKONERS.—TABLES OF CIRCULAR MEASURES.—TABLES OF AREAS OF AND CIRCUMFERENCES OF CIRCLES.—TABLES OF AREAS OF SEGMENTS OF CIRCLES.—TABLES OF SQUARES AND CUBES AND ROOTS OF NUMBERS.—TABLES OF LOGARITHMS OF NUMBERS.—TABLES OF HYPERBOLIC LOGARITHMS.—TABLES OF NATURAL SINES, TANGENTS, &c.—TABLES OF LOGARITHMIC SINES, TANGENTS, &c.

"In these days of advanced knowledge a work like this is of the greatest value. It contains a vast amount of information. We unhesitatingly say that it is the most valuable compilation for its specific purpose that has ever been printed. No naval architect, engineer, surveyor, or seaman, wood or iron shipbuilder, can afford to be without this work."—*Nautical Magazine.*

"Should be used by all who are engaged in the consrruction or design of vessels. . . . Will be found to contain the most useful tables and formulæ required by shipbuilders, carefully collected from the best authorities, and put together in a popular and simple form. The book is one of exceptional merit."—*Engineer.*

"The professional shipbuilder has now, in a convenient and accessible form, reliable data for solving many of the numerous problems that present themselves in the course of his work."—*Iron.*

"There is no doubt that a pocket-book of this description must be a necessity in the shipbuilding trade. . . The volume contains a mass of useful information clearly expressed and presented in a handy form."—*Marine Engineer.*

WANNAN'S MARINE ENGINEER'S GUIDE

To Board of Trade Examinations for Certificates of Competency. Containing all Latest Questions to Date, with Simple, Clear, and Correct Solutions; Elementary and Verbal Questions and Answers: complete Set of Drawings with Statements completed. By A. C. WANNAN, C.E., and E. W. I. WANNAN, M.I.M.E. Illustrated with numerous Engravings. Crown 8vo, 370 pages, cloth. [*Just Published.* **8/6**

"The book is clearly and plainly written and avoids unnecessary explanations and formulas, and we consider it a valuable book for students of marine engineering."—*Nautical Magazine.*

WANNAN'S MARINE ENGINEER'S POCKET-BOOK.

Containing the Latest Board of Trade Rules and Data for Marine Engineers. By A. C. WANNAN. Second Edition, carefully Revised. Square 18mo, with thumb Index, leather. [*Just Published.* **5/0**

"There is a great deal of useful information in this little pocket-book. It is of the rule-of-thumb order, and is, on that account, well adapted to the uses of the sea-going engineer."—*Engineer.*

MARINE ENGINES AND STEAM VESSELS.

A Treatise on. By ROBERT MURRAY, C.E. Eighth Edition, thoroughly Revised, with considerable Additions by the Author and by GEORGE CARLISLE, C.E., Senior Surveyor to the Board of Trade. 12mo, cloth . **4/6**

SEA TERMS, PHRASES, AND WORDS

(Technical Dictionary of) used in the English and French Languages (English-French, French-English). For the Use of Seamen, Engineers, Pilots, Shipbuilders, Shipowners, and Ship-brokers. Compiled by W. PIRRIE, late of the African Steamship Company. Fcap. 8vo, cloth limp **5/0**

"This volume will be highly appreciated by seamen, engineers, pilots, shipbuilders and shipowners. It will be found wonderfully accurate and complete."—*Scotsman.*

"A very useful dictionary, which has long been wanted by French and English engineers, masters, officers and others."—*Shipping World.*

ELECTRIC SHIP-LIGHTING.

A Handbook on the Practical Fitting and Running of Ships' Electrical Plant, for the Use of Shipowners and Builders, Marine Electricians and Sea-going Engineers in Charge. By J. W. URQUHART, Author of "Electric Light," "Dynamo Construction," &c. Second Edition, Revised and Extended. 326 pp., with 88 Illustrations. Crown 8vo, cloth. [*Just Published.* **7/6**

MARINE ENGINEER'S POCKET-BOOK.

Consisting of useful Tables and Formulæ. By FRANK PROCTOR, A.I.N.A. Third Edition. Royal 32mo, leather, gilt edges, with strap . . . **4/0**

"We recommend it to our readers as going far to supply a long-felt want."—*Naval Science.*

"A most useful companion to all marine engineers."—*United Service Gazette.*

ELEMENTARY ENGINEERING.

A Manual for Young Marine Engineers and Apprentices. In the Form of Questions and Answers on Metals, Alloys, Strength of Materials, Construction and Management of Marine Engines and Boilers, Geometry, &c., &c. With an Appendix of Useful Tables. By J. S. BREWER. Crown 8vo, cloth . **1/6**

"Contains much valuable information for the class for whom it is intended, especially in the chapters on the management of boilers and engines."—*Nautical Magazine.*

PRACTICAL NAVIGATION.

Consisting of THE SAILOR'S SEA-BOOK, by JAMES GREENWOOD and W. H. ROSSER; together with the exquisite Mathematical and Nautical Tables for the Working of the Problems, by HENRY LAW, C.E., and Professor J. R. YOUNG. Illustrated. 12mo, strongly half-bound **7/0**

MARINE ENGINEER'S DRAWING-BOOK.

Adapted to the Requirements of the Board of Trade Examinations. By JOHN LOCKIE, C.E. With 22 Plates, Drawn to Scale. Royal 8vo, cloth . **3/6**

THE ART AND SCIENCE OF SAILMAKING.

By SAMUEL B. SADLER, Practical Sailmaker, late in the employment of Messrs. Ratsey and Lapthorne, of Cowes and Gosport. With Plates and other Illustrations. Small 4to, cloth **12/6**

"This extremely practical work gives a complete education in all the branches of the manufacture, cutting out, roping, seaming, and goring. It is copiously illustrated, and will form a first rate text-book and guide."—*Portsmouth Times.*

CHAIN CABLES AND CHAINS.

Comprising Sizes and Curves of Links, Studs, &c., Iron for Cables and Chains, Chain Cable and Chain Making, Forming and Welding Links, Strength of Cables and Chains, Certificates for Cables, Marking Cables, Prices of Chain Cables and Chains, Historical Notes, Acts of Parliament, Statutory Tests, Charges for Testing, List of Manufacturers of Cables, &c., &c. By THOMAS W. TRAILL, F.E.R.N., M.Inst.C.E., Engineer-Surveyor-in-Chief, Board of Trade, Inspector of Chain Cable and Anchor Proving Establishments, and General Superintendent Lloyd's Committee on Proving Establishments. With numerous Tables, Illustrations, and Lithographic Drawings. Folio, cloth, bevelled boards . . . . **£2 2s.**

"It contains a vast amount of valuable information. Nothing seems to be wanting to make it a complete and standard work of reference on the subject."—*Nautical Magazine.*

MINING AND METALLURGY.

COLLIERY WORKING AND MANAGEMENT.

Comprising the Duties of a Colliery Manager, the Oversight and Arrangement of Labour and Wages, and the different Systems of Working Coal Seams. By H. F. BULMAN and R. A. S. REDMAYNE. 350 pp., with 28 Plates and other Illustrations, including Underground Photographs. Medium 8vo, cloth. [*Just Published.* **15/0**

"This is, indeed, an admirable Handbook for Colliery Managers, in fact it is an indispensable adjunct to a Colliery Manager's education, as well as being a most useful and interesting work on the subject for all who in any way have to do with coal mining. The underground photographs are an attractive feature of the work, being very lifelike and necessarily true representations of the scenes they depict."—*Colliery Guardian.*

"Mr. Bulman and Mr. Redmayne, who are both experienced Colliery Managers of great literary ability, are to be congratulated on having supplied an authoritative work dealing with a side of the subject of coal mining which has hitherto received but scant treatment. The authors elucidate their text by 119 woodcuts and 28 plates, most of the latter being admirable reproductions of photographs taken underground with the aid of the magnesium flash-light. These illustrations are excellent."—*Nature.*

INFLAMMABLE GAS AND VAPOUR IN THE AIR

(The Detection and Measurement of). By FRANK CLOWES, D.Sc., Lond., F.I.C., Prof. of Chemistry in the University College, Nottingham. With a Chapter on THE DETECTION AND MEASUREMENT OF PETROLEUM VAPOUR by BOVERTON REDWOOD, F.R.S.E., Consulting Adviser to the Corporation of London under the Petroleum Acts. Crown 8vo, cloth. [*Just Published. Net* **5/0**

"Professor Clowes has given us a volume on a subject of much industrial importance . . . Those interested in these matters may be recommended to study this book, which is easy of comprehension and contains many good things."—*The Engineer.*

"A convenient summary of the work on which Professor Clowes has been engaged for some considerable time. . . . It is hardly necessary to say that any work on these subjects with these names on the title-page must be a valuable one, and one that no mining engineer—certainly no coal miner—can afford to ignore or to leave unread."—*Mining Journal.*

MACHINERY FOR METALLIFEROUS MINES.

A Practical Treatise for Mining Engineers, Metallurgists, and Managers of Mines. By E. HENRY DAVIES, M.E., F.G.S. Crown 8vo, 580 pp., with upwards of 300 Illustrations, cloth. **12/6**

"Mr. Davies, in this handsome volume, has done the advanced student and the manager of mines good service. Almost every kind of machinery in actual use is carefully described, and the woodcuts and plates are good."—*Athenæum.*

"From cover to cover the work exhibits all the same characteristics which excite the confidence and attract the attention of the student as he peruses the first page. The work may safely be recommended. By its publication the literature connected with the industry will be enriched and the reputation of its author enhanced."—*Mining Journal.*

METALLIFEROUS MINERALS AND MINING.

By D. C. DAVIES, F.G.S., Mining Engineer, &c., Author of "A Treatise on Slate and Slate Quarrying." Fifth Edition, thoroughly Revised and much Enlarged by his Son, E. HENRY DAVIES, M.E., F.G.S. With about 150 Illustrations. Crown 8vo, cloth **12/6**

"Neither the practical miner nor the general reader, interested in mines, can have a better book for his companion and his guide."—*Mining Journal.*

"We are doing our readers a service in calling their attention to this valuable work."—*Mining World.*

"As a history of the present state of mining throughout the world this book has a real value, and it supplies an actual want."—*Athenæum.*

EARTHY AND OTHER MINERALS AND MINING.

By D. C. DAVIES, F.G.S., Author of "Metalliferous Minerals," &c. Third Edition, Revised and Enlarged by his Son, E. HENRY DAVIES, M.E., F.G.S. With about 100 Illustrations. Crown 8vo, cloth **12/6**

"We do not remember to have met with any English work on mining matters that contains the same amount of information packed in equally convenient form."—*Academy.*

"We should be inclined to rank it as among the very best of the handy technical and trades manuals which have recently appeared."—*British Quarterly Review.*

BRITISH MINING.

A Treatise on the History, Discovery, Practical Development, and Future Prospects of Metalliferous Mines in the United Kingdom. By ROBERT HUNT, F.R.S., late Keeper of Mining Records. Upwards of 950 pp., with 230 Illustrations. Second Edition, Revised. Super-royal 8vo, cloth **£2 2s.**

"The book is a treasure-house of statistical information on mining subjects, and we know of no other work embodying so great a mass of matter of this kind. Were this the only merit of Mr. Hunt's volume it would be sufficient to render it indispensable in the library of every one interested in the development of the mining and metallurgical industries of this country."—*Athenæum.*

MINE DRAINAGE.

A Complete Practical Treatise on Direct-Acting Underground Steam Pumping Machinery. By STEPHEN MICHELL. Second Edition, Re-written and Enlarged, 390 pp. With about 250 Illustrations. Royal 8vo, cloth.

[*Just Published. Net* **25/0**

SUMMARY OF CONTENTS:—HORIZONTAL PUMPING ENGINES.—ROTARY AND NON-ROTARY HORIZONTAL ENGINES.—SIMPLE AND COMPOUND STEAM PUMPS.—VERTICAL PUMPING ENGINES.—ROTARY AND NON-ROTARY VERTICAL ENGINES.—SIMPLE AND COMPOUND STEAM PUMPS.—TRIPLE-EXPANSION STEAM PUMPS.—PULSATING STEAM PUMPS.—PUMP VALVES.—SINKING PUMPS, &c., &c.

"This volume contains an immense amount of important and interesting new matter. The book should undoubtedly prove of great use to all who wish for information on the subject, inasmuch as the different patterns of steam pumps are not alone lucidly described and clearly illustrated, but in addition numerous tables are supplied, in which their sizes, capacity, price, &c., are set forth, hence facilitating immensely the rational selection of a pump to suit any purpose that the reader may desire, or, on the other hand, supplying him with useful information about any of the pumps that come within the scope of the volume."—*The Engineer.*

THE PROSPECTOR'S HANDBOOK.

A Guide for the Prospector and Traveller in search of Metal-Bearing or other Valuable Minerals. By J. W. ANDERSON, M.A. (Camb.), F.R.G.S., Author of "Fiji and New Caledonia." Eighth Edition, thoroughly Revised and much Enlarged. Small crown 8vo, cloth, **3/6**; or, leather, pocket-book form, with tuck. [*Just Published.* **4/6**

"Will supply a much-felt want, especially among Colonists, in whose way are so often thrown many mineralogical specimens the value of which it is difficult to determine."—*Engineer.*

"How to find commercial minerals, and how to identify them when they are found, are the leading points to which attention is directed. The author has managed to pack as much practical detail into his pages as would supply material for a book three times its size."—*Mining Journal.*

NOTES AND FORMULÆ FOR MINING STUDENTS.

By JOHN HERMAN MERIVALE, M.A., Late Professor of Mining in the Durham College of Science, Newcastle-upon-Tyne. Fourth Edition, Revised and Enlarged. By H. F. BULMAN, A.M.Inst.C.E. Small crown 8vo, cloth.

[*Just Published.* **2/6**

"The author has done his work in a creditable manner, and has produced a book that will be of service to students and those who are practically engaged in mining operations."—*Engineer.*

THE MINER'S HANDBOOK.

A Handy Book of Reference on the subjects of Mineral Deposits, Mining Operations, Ore Dressing, &c. For the Use of Students and others interested in Mining Matters. By JOHN MILNE, F.R.S., Professor of Mining in the Imperial University of Japan. Revised Edition. Fcap. 8vo, leather . **7/6**

"Professor Milne's handbook is sure to be received with favour by all connected with mining, and will be extremely popular among students."—*Athenæum.*

POCKET-BOOK FOR MINERS AND METALLURGISTS.

Comprising Rules, Formulæ, Tables, and Notes for Use in Field and Office Work. By F. DANVERS POWER, F.G.S., M.E. Second Edition, Corrected. Fcap. 8vo, leather. [*Just Published.* **9/0**

"This excellent book is an admirable example of its kind, and ought to find a large sale amongst English-speaking prospectors and mining engineers."—*Engineering.*

FIELD TESTING FOR GOLD AND SILVER.

A Practical Manual for Prospectors and Miners. By W. H. MERRITT, M.N.E. Inst. M.E., A.R.S.M., &c. With Photographic Plates and other Illustrations. Fcap. 8vo, leather. [*Just Published. Net* **5/0**

THE COLLIERY MANAGER'S HANDBOOK.

A Comprehensive Treatise on the Laying-out and Working of Collieries. Designed as a Book of Reference for Colliery Managers, and for the Use of Coal Mining Students preparing for First-class Certificates. By CALEB PAMELY, Mining Engineer and Surveyor; Member of the North of England Institute of Mining and Mechanical Engineers; and Member of the South Wales Institute of Mining Engineers. With 700 Plans, Diagrams, and other Illustrations. Fourth Edition, Revised and Enlarged, medium 8vo, over 900 pp. Strongly bound . . . . **£1 5s.**

SUMMARY OF CONTENTS:—GEOLOGY.—SEARCH FOR COAL.—MINERAL LEASES AND OTHER HOLDINGS.—SHAFT SINKING.—FITTING UP THE SHAFT AND SURFACE ARRANGEMENTS.—STEAM BOILERS AND THEIR FITTINGS.—TIMBERING AND WALLING.—NARROW WORK AND METHODS OF WORKING.—UNDERGROUND CONVEYANCE.—DRAINAGE.—THE GASES MET WITH IN MINES; VENTILATION.—ON THE FRICTION OF AIR IN MINES.—THE PRIESTMAN OIL ENGINE; PETROLEUM AND NATURAL GAS.—SURVEYING AND PLANNING.—SAFETY LAMPS AND FIREDAMP DETECTORS.—SUNDRY AND INCIDENTAL OPERATIONS AND APPLIANCES.—COLLIERY EXPLOSIONS.—MISCELLANEOUS QUESTIONS AND ANSWERS.—*Appendix:* SUMMARY OF REPORT OF H.M. COMMISSIONERS ON ACCIDENTS IN MINES.

"Mr. Pamely has not only given us a comprehensive reference book of a very high order, suitable to the requirements of mining engineers and colliery managers, but has also provided mining students with a class-book that is as interesting as it is instructive."—*Colliery Manager.*

"Mr. Pamely's work is eminently suited to the purpose for which it is intended, being clear, interesting, exhaustive, rich in detail, and up to date, giving descriptions of the latest machines in every department. A mining engineer could scarcely go wrong who followed this work."—*Colliery Guardian.*

"This is the most complete 'all-round' work on coal-mining published in the English language. . . . No library of coal-mining books is complete without it."—*Colliery Engineer* (Scranton, Pa., U.S.A.).

COAL & IRON INDUSTRIES of the UNITED KINGDOM.

Comprising a Description of the Coal Fields, and of the Principal Seams of Coal, with Returns of their Produce and its Distribution, and Analyses of Special Varieties. Also, an Account of the Occurrence of Iron Ores in Veins or Seams; Analyses of each Variety; and a History of the Rise and Progress of Pig Iron Manufacture. By RICHARD MEADE. 8vo, cloth . . **£1 8s.**

"Of this book we may unreservedly say that it is the best of its class which we have ever met. . . . A book of reference which no one engaged in the iron or coal trades should omit from his library."—*Iron and Coal Trades Review.*

TRAVERSE TABLES.

For use in Mine Surveying. By W. LINTERN, Mining Engineer. Crown 8vo, cloth. [*Just Published. Net* **3/0**

COAL AND COAL MINING.

By the late Sir WARINGTON W. SMYTH, F.R.S., Chief Inspector of the Mines of the Crown. Eighth Edition, Revised and Extended by T. FORSTER BROWN, Mining Engineer, Chief Inspector of the Mines of the Crown and of the Duchy of Cornwall. Crown 8vo, cloth. [*Just Published.* **3/6**

"As an outline is given of every known coal-field in this and other countries, as well as of the principal methods of working, the book will doubtless interest a very large number of readers."—*Mining Journal.*

ASBESTOS AND ASBESTIC.

Their Properties, Occurrence, and Use. By ROBERT H. JONES, F.S.A., Mineralogist, Hon. Mem. Asbestos Club, Black Lake, Canada. With Ten Collotype Plates and other Illustrations. Demy 8vo, cloth. [*Just Published.* **16/0**

"An interesting and invaluable work."—*Colliery Guardian.*

SUBTERRANEOUS SURVEYING

(Elementary and Practical Treatise on), with and without the Magnetic Needle. By THOMAS FENWICK, Surveyor of Mines, and THOMAS BAKER, C.E. Illustrated. 12mo, cloth **2/6**

GRANITES AND OUR GRANITE INDUSTRIES.

By GEORGE F. HARRIS, F.G.S., Membre de la Société Belge de Géologie, Lecturer on Economic Geology at the Birkbeck Institution, &c. With Illustrations. Crown 8vo, cloth **2/6**

"A clearly and well-written manual for persons engaged or interested in the granite industry. —*Scotsman.*

THE METALLURGY OF GOLD.

A Practical Treatise on the Metallurgical Treatment of Gold-bearing Ores. Including the Processes of Concentration, Chlorination, and Extraction by Cyanide, and the Assaying, Melting, and Refining of Gold. By M. EISSLER, Mining Engineer and Metallurgical Chemist, formerly Assistant Assayer of the U.S. Mint, San Francisco. Fourth Edition, Enlarged. With about 250 Illustrations and numerous Folding Plates and Working Drawings. Large crown 8vo, cloth. [*Just Published.* **16/0**

"This book thoroughly deserves its title of a 'Practical Treatise.' The whole process of gold milling, from the breaking of the quartz to the assay of the bullion, is described in clear and orderly narrative and with much, but not too much, fulness of detail."—*Saturday Review.*

"The work is a storehouse of information and valuable data, and we strongly recommend it to all professional men engaged in the gold-mining industry."—*Mining Journal.*

THE CYANIDE PROCESS OF GOLD EXTRACTION.

Including its Practical Application on the Witwatersrand Gold Fields in South Africa. By M. EISSLER, M.E., Author of "The Metallurgy of Gold," &c. With Diagrams and Working Drawings. Second Edition, Revised and Enlarged. 8vo, cloth. [*Just Published.* **7/6**

"This book is just what was needed to acquaint mining men with the actual working of a process which is not only the most popular, but is, as a general rule, the most successful for the extraction of gold from tailings."—*Mining Journal.*

"The work will prove invaluable to all interested in gold mining, whether metallurgists or as investors."—*Chemical News.*

THE METALLURGY OF SILVER.

A Practical Treatise on the Amalgamation, Roasting, and Lixiviation of Silver Ores. Including the Assaying, Melting, and Refining of Silver Bullion. By M. EISSLER, Author of "The Metallurgy of Gold," &c. Third Edition. Crown 8vo, cloth **10/6**

"A practical treatise, and a technical work which we are convinced will supply a long-felt want amongst practical men, and at the same time be of value to students and others indirectly connected with the industries."—*Mining Journal.*

"From first to last the book is thoroughly sound and reliable."—*Colliery Guardian.*

"For chemists, practical miners, assayers, and investors alike we do not know of any work on the subject so handy and yet so comprehensive."—*Glasgow Herald.*

THE METALLURGY OF ARGENTIFEROUS LEAD.

A Practical Treatise on the Smelting of Silver-Lead Ores and the Refining of Lead Bullion. Including Reports on various Smelting Establishments and Descriptions of Modern Smelting Furnaces and Plants in Europe and America. By M. EISSLER, M.E., Author of "The Metallurgy of Gold," &c. Crown 8vo, 400 pp., with 183 Illustrations, cloth **12/6**

"The numerous metallurgical processes, which are fully and extensively treated of, embrace all the stages experienced in the passage of the lead from the various natural states to its issue from the refinery as an article of commerce."—*Practical Engineer.*

"The present volume fully maintains the reputation of the author. Those who wish to obtain a thorough insight into the present state of this industry cannot do better than read this volume, and all mining engineers cannot fail to find many useful hints and suggestions in it."—*Industries.*

METALLURGY OF IRON.

By H. BAUERMAN, F.G.S., A.R.S.M. Sixth Edition, Revised and Enlarged. 12mo, cloth **5/0**

THE IRON ORES of GREAT BRITAIN and IRELAND.

Their Mode of Occurrence, Age and Origin, and the Methods of Searching for and Working Them. With a Notice of some of the Iron Ores of Spain. By J. D. KENDALL, F.G.S., Mining Engineer. Crown 8vo, cloth . . **16/0**

"The author has a thorough practical knowledge of his subject, and has supplemented a careful study of the available literature by unpublished information derived from his own observations. The result is a very useful volume, which cannot fail to be of value to all interested in the iron industry of the country."—*Industries.*

ELECTRICITY, ELECTRICAL ENGINEERING, &c.

SUBMARINE TELEGRAPHS.

Their History, Construction, and Working. Founded in part on WÜNSCHENDORFF'S "Traité de Télégraphie Sous-Marine," and Compiled from Authoritative and Exclusive Sources. By CHARLES BRIGHT, F.R.S.E. Super-royal 8vo, about 780 pp., fully Illustrated, including Maps and Folding Plates. [*Just Published. Net* **£3 3s.**

"There are few, if any, persons more fitted to write a treatise on submarine telegraphy than Mr. Charles Bright. The author has done his work admirably, and has written in a way which will appeal as much to the layman as to the engineer. This admirable volume must, for many years to come, hold the position of the English classic on submarine telegraphy."—*Engineer.*

"This book is full of information. It makes a book of reference which should be in every engineer's library."—*Nature.*

"Mr. Bright's interestingly written and admirably illustrated book will meet with a welcome reception from cable men."—*Electrician.*

"The author deals with his subject from all points of view—political and strategical as well as scientific. The work will be of interest, not only to men of science, but to the general public. We can strongly recommend it."—*Athenæum.*

"The work contains a great store of technical information concerning the making and working of submarine telegraphs. In bringing together the most valuable results relating to the evolution of the telegraph, the author has rendered a service that will be very widely appreciated."—*Morning Post.*

THE ELECTRICAL ENGINEER'S POCKET-BOOK.

Consisting of Modern Rules, Formulæ, Tables, and Data. By H. R. KEMPE, M.Inst.E.E., A.M.Inst.C.E., Technical Officer Postal Telegraphs, Author of "A Handbook of Electrical Testing," "The Engineer's Year-Book," &c. Second Edition, thoroughly Revised, with Additions. With numerous Illustrations. Royal 32mo, oblong, leather **5/0**

"It is the best book of its kind."—*Electrical Engineer.*

"The Electrical Engineer's Pocket-Book is a good one."—*Electrician.*

"Strongly recommended to those engaged in the electrical industries."—*Electrical Review.*

ELECTRIC LIGHT FITTING.

A Handbook for Working Electrical Engineers, embodying Practical Notes on Installation Management. By J. W. URQUHART, Electrician, Author of "Electric Light," &c. With numerous Illustrations. Third Edition, Revised, with Additions. Crown 8vo, cloth. [*Just Published.* **5/0**

"This volume deals with what may be termed the mechanics of electric lighting, and is addressed to men who are already engaged in the work, or are training for it. The work traverses a great deal of ground, and may be read as a sequel to the same author's useful work on 'Electric Light.'"—*Electrician.*

"Eminently practical and useful. . . . Ought to be in the hands of every one in charge of an electric light plant."—*Electrical Engineer.*

ELECTRIC LIGHT.

Its Production and Use, Embodying Plain Directions for the Treatment of Dynamo-Electric Machines, Batteries, Accumulators, and Electric Lamps. By J. W. URQUHART, C.E. Sixth Edition, Revised, with Additions and 145 Illustrations. Crown 8vo, cloth. [*Just Published.* **7/6**

"The whole ground of electric lighting is more or less covered and explained in a very clear and concise manner."—*Electrical Review.*

"A *vade-mecum* of the salient facts connected with the science of electric lighting."—*Electrician.*

"You cannot for your purpose have a better book than 'Electric Light' by Urquhart."—*Engineer.*

DYNAMO CONSTRUCTION.

A Practical Handbook for the Use of Engineer-Constructors and Electricians-in-Charge. Embracing Framework Building, Field Magnet and Armature Winding and Grouping, Compounding, &c. With Examples of leading English, American, and Continental Dynamos and Motors. By J. W. URQUHART, Author of "Electric Light," &c. Second Edition, Enlarged. With 114 Illustrations. Crown 8vo, cloth **7/6**

"Mr. Urquhart's book is the first one which deals with these matters in such a way that the engineering student can understand them. The book is very readable, and the author leads his readers up to difficult subjects by reasonably simple tests."—*Engineering Review.*

"A book for which a demand has long existed."—*Mechanical World.*

THE MANAGEMENT OF DYNAMOS.

A Handy Book of Theory and Practice for the Use of Mechanics, Engineers, Students, and others in Charge of Dynamos. By G. W. LUMMIS-PATERSON. Second Edition, thoroughly Revised and Enlarged. With numerous Illustrations. Crown 8vo, cloth. [*Just Published.* **4/6**

"An example which deserves to be taken as a model by other authors. The subject is treated in a manner which any intelligent man who is fit to be entrusted with charge of an engine should be able to understand. It is a useful book to all who make, tend, or employ electric machinery."—*Architect.*

THE STANDARD ELECTRICAL DICTIONARY.

A Popular Encyclopædia of Words and Terms Used in the Practice of Electrical Engineering. By T. O'CONOR SLOANE, A.M., Ph.D. Second Edition, with Appendix to date. Crown 8vo, 680 pp., 390 Illustrations, cloth. [*Just Published.* **7/6**

"The work has many attractive features in it, and is, beyond doubt, a well put together and useful publication. The amount of ground covered may be gathered from the fact that in the index about 5,600 references will be found."—*Electrical Review.*

ELECTRIC SHIP-LIGHTING.

A Handbook on the Practical Fitting and Running of Ships' Electrical Plant. For the Use of Shipowners and Builders, Marine Electricians, and Seagoing Engineers-in-Charge. By J. W. URQUHART, C.E. Second Edition, Revised and Extended. 326 pp., with 88 Illustrations, Crown 8vo, cloth. [*Just Published.* **7/6**

"The subject of ship electric lighting is one of vast importance, and Mr. Urquhart is to be highly complimented for placing such a valuable work at the service of marine electricians."—*The Steamship.*

ELECTRIC LIGHT FOR COUNTRY HOUSES.

A Practical Handbook on the Erection and Running of Small Installations, with Particulars of the Cost of Plant and Working. By J. H. KNIGHT. Second Edition, Revised. Crown 8vo, wrapper. [*Just Published.* **1/0**

"The book contains excellent advice and many practical hints for the help of those who wish to light their own houses."—*Building News.*

ELECTRIC LIGHTING (ELEMENTARY PRINCIPLES OF).

By ALAN A. CAMPBELL SWINTON, Associate I.E.E. Fourth Edition, Enlarged and Revised. With 16 Illustrations. Crown 8vo, cloth **1/6**

"Any one who desires a short and thoroughly clear exposition of the elementary principles of electric lighting cannot do better than read this little work."—*Bradford Observer.*

DYNAMIC ELECTRICITY AND MAGNETISM.

By PHILIP ATKINSON, A.M., Ph.D., Author of "Elements of Static Electricity," &c. Crown 8vo, 417 pp., with 120 Illustrations, cloth . **10/6**

POWER TRANSMITTED BY ELECTRICITY

And applied by the Electric Motor, including Electric Railway Construction. By P. ATKINSON, A.M., Ph.D. With 96 Illustrations. Crown 8vo, cloth **7/6**

HOW TO MAKE A DYNAMO.

A Practical Treatise for Amateurs. Containing numerous Illustrations and Detailed Instructions for Constructing a Small Dynamo to Produce the Electric Light. By ALFRED CROFTS. Fifth Edition, Revised and Enlarged. Crown 8vo, cloth. [*Just Published.* **2/0**

"The instructions given in this unpretentious little book are sufficiently clear and explicit to enable any amateur mechanic possessed of average skill and the usual tools to be found in an amateur's workshop to build a practical dynamo machine."—*Electrician.*

THE STUDENT'S TEXT-BOOK OF ELECTRICITY.

By H. M. NOAD, F.R.S. Cheaper Edition. 650 pp., with 470 Illustrations. Crown 8vo, cloth **9/0**

ARCHITECTURE, BUILDING, &c.

PRACTICAL BUILDING CONSTRUCTION.

A Handbook for Students Preparing for Examinations, and a Book of Reference for Persons Engaged in Building. By JOHN PARNELL ALLEN, Surveyor, Lecturer on Building Construction at the Durham College of Science, Newcastle-on-Tyne. Third Edition, Revised and Enlarged. Medium 8vo, 450 pp., with 1,000 Illustrations, cloth. [*Just Published.* **7/6**

"The most complete exposition of building construction we have seen. It contains all that is necessary to prepare students for the various examinations in building construction."—*Building News.*

"The author depends nearly as much on his diagrams as on his type. The pages suggest the hand of a man of experience in building operations—and the volume must be a blessing to many teachers as well as to students."—*The Architect.*

"The work is sure to prove a formidable rival to great and small competitors alike, and bids fair to take a permanent place as a favourite student's text-book. The large number of illustrations deserve particular mention for the great merit they possess for purposes of reference in exactly corresponding to convenient scales."—*Journal of the Royal Institute of British Architects.*

PRACTICAL MASONRY.

A Guide to the Art of Stone Cutting. Comprising the Construction, Setting Out, and Working of Stairs, Circular Work, Arches, Niches, Domes, Pendentives, Vaults, Tracery Windows, &c., &c. For the Use of Students, Masons, and other Workmen. By WILLIAM R. PURCHASE, Building Inspector to the Borough of Hove. Third Edition, with Glossary of Terms. Royal 8vo, 142 pp., with 52 Lithographic Plates, comprising nearly 400 separate Diagrams, cloth. [*Just Published.* **7/6**

"Mr. Purchase's 'Practical Masonry' will undoubtedly be found useful to all interested in this important subject, whether theoretically or practically. Most of the examples given are from actual work carried out, the diagrams being carefully drawn. The book is a practical treatise on the subject, the author himself having commenced as an operative mason, and afterwards acted as foreman mason on many large and important buildings prior to the attainment of his present position. It should be found of general utility to architectural students and others, as well as to those to whom it is specially addressed."—*Journal of the Royal Institute of British Architects.*

CONCRETE: ITS NATURE AND USES.

A Book for Architects, Builders, Contractors, and Clerks of Works. By GEORGE L. SUTCLIFFE, A.R.I.B.A. 350 pp., with numerous Illustrations. Crown 8vo, cloth **7/6**

"The author treats a difficult subject in a lucid manner. The manual fills a long-felt gap. It is careful and exhaustive; equally useful as a student's guide and an architect's book of reference."—*Journal of the Royal Institute of British Architects.*

"There is room for this new book, which will probably be for some time the standard work on the subject for a builder's purpose."—*Glasgow Herald.*

THE MECHANICS OF ARCHITECTURE.

A Treatise on Applied Mechanics, especially Adapted to the Use of Architects. By E. W. TARN, M.A., Author of "The Science of Building," &c. Second Edition, Enlarged. Illustrated with 125 Diagrams. Crown 8vo, cloth **7/6**

"The book is a very useful and helpful manual of architectural mechanics, and really contains sufficient to enable a careful and painstaking student to grasp the principles bearing upon the majority of building problems. . . . Mr. Tarn has added, by this volume, to the debt of gratitude which is owing to him by architectural students for the many valuable works which he has produced for their use."—*The Builder.*

LOCKWOOD'S BUILDER'S PRICE BOOK for 1900.

A Comprehensive Handbook of the Latest Prices and Data for Builders, Architects, Engineers, and Contractors. Re-constructed, Re-written, and Greatly Enlarged. By FRANCIS T. W. MILLER. 800 closely-printed pages, crown 8vo, cloth **4/0**

"This book is a very useful one, and should find a place in every English office connected with the building and engineering professions."—*Industries.*

"An excellent book of reference."—*Architect.*

"In its new and revised form this Price Book is what a work of this kind should be—comprehensive, reliable, well arranged, legible, and well bound."—*British Architect.*

THE DECORATIVE PART OF CIVIL ARCHITECTURE.

By Sir WILLIAM CHAMBERS, F.R.S. With Portrait, Illustrations, Notes, and an EXAMINATION OF GRECIAN ARCHITECTURE, by JOSEPH GWILT, F.S.A. Revised and Edited by W. H. LEEDS. 66 Plates, 4to, cloth . . **21/0**

A HANDY BOOK OF VILLA ARCHITECTURE.

Being a Series of Designs for Villa Residences in various Styles. With Outline Specifications and Estimates. By C. WICKES, Architect, Author of "The Spires and Towers of England," &c. 61 Plates, 4to, half-morocco, gilt edges . . . . **£1 11s. 6d.**

"The whole of the designs bear evidence of their being the work of an artistic architect, and they will prove very valuable and suggestive."—*Building News.*

THE ARCHITECT'S GUIDE.

Being a Text-book of Useful Information for Architects, Engineers, Surveyors Contractors, Clerks of Works, &c., &c. By FREDERICK ROGERS, Architect. Third Edition. Crown 8vo, cloth **3/6**

"As a text-book of useful information for architects, engineers, surveyors, &c., it would be hard to find a handier or more complete little volume."—*Standard.*

ARCHITECTURAL PERSPECTIVE.

The whole Course and Operations of the Draughtsman in Drawing a Large House in Linear Perspective. Illustrated by 43 Folding Plates. By F. O. FERGUSON. Second Edition, Enlarged. 8vo, boards **3/6**

"It is the most intelligible of the treatises on this ill-treated subject that I have met with."—E. INGRESS BELL, ESQ., in the *R.I.B.A. Journal.*

PRACTICAL RULES ON DRAWING.

For the Operative Builder and Young Student in Architecture. By GEORGE PYNE. 14 Plates, 4to, boards **7/6**

MEASURING AND VALUING ARTIFICER'S WORK

(The Student's Guide to the Practice of). Containing Directions for taking Dimensions, Abstracting the same, and bringing the Quantities into Bill, with Tables of Constants for Valuation of Labour, and for the Calculation of Areas and Solidities. Originally edited by E. DOBSON, Architect. With Additions by E. W. TARN, M.A. Seventh Edition, Revised. With 8 Plates and 63 Woodcuts. Crown 8vo, cloth. [*Just Published.* **7/6**

"This edition will be found the most complete treatise on the principles of measuring and valuing artificer's work that has yet been published."—*Building News.*

TECHNICAL GUIDE, MEASURER, AND ESTIMATOR.

For Builders and Surveyors. Containing Technical Directions for Measuring Work in all the Building Trades, Complete Specifications for Houses, Roads, and Drains, and an Easy Method of Estimating the parts of a Building collectively. By A. C. BEATON. Eighth Edition. Waistcoat-pocket size, gilt edges **1/6**

"No builder, architect, surveyor, or valuer should be without his 'Beaton.'"—*Building News.*

CONSTRUCTIONAL IRON AND STEEL WORK.

As Applied to Public, Private, and Domestic Buildings. A Practical Treatise for Architects, Students, and Builders. By F. CAMPIN. Crown 8vo, cloth. [*Just Published.* **3/6**

"Any one who wants a book on ironwork, as employed in buildings for stanchions, columns, and beams, will find the present volume to be suitable. The author has had long and varied experience in designing this class of work. The illustrations have the character of working drawings. This practical book may be counted a most valuable work."—*British Architect.*

SPECIFICATIONS FOR PRACTICAL ARCHITECTURE.

A Guide to the Architect, Engineer, Surveyor, and Builder. With an Essay on the Structure and Science of Modern Buildings. Upon the Basis of the Work by ALFRED BARTHOLOMEW, thoroughly Revised, Corrected, and greatly added to by FREDERICK ROGERS, Architect. Third Edition, Revised. 8vo, cloth **15/0**

"The work is too well known to need any recommendation from us. It is one of the books with which every young architect must be equipped."—*Architect.*

THE HOUSE-OWNER'S ESTIMATOR.

Or, What will it Cost to Build, Alter, or Repair? A Price Book for Unprofessional People as well as the Architectural Surveyor and Builder. By J. D. SIMON. Edited by F. T. W. MILLER, A.R.I.B.A. Fourth Edition. Crown 8vo, cloth **3/6**

"In two years it will repay its cost a hundred times over."—*Field.*

SANITATION AND WATER SUPPLY.

THE PURIFICATION OF SEWAGE.

Being a Brief Account of the Scientific Principles of Sewage Purification, and their Practical Application. By SIDNEY BARWISE, M.D. (Lond.), M.R.C.S., D.P.H. (Camb.), Fellow of the Sanitary Institute, Medical Officer of Health to the Derbyshire County Council. Crown 8vo, cloth. [*Just Published.* **5/0**

"'What process shall we adopt to purify our sewage?' This question has rarely been treated rom so many points of view in one book. This volume teems with practical hints, which show the intimate knowledge the author has of his subject."—*The Engineer.*

"We know of no book of the same size which gives so complete and accurate an account of the principles of sewage purification."—*The Builder.*

WATER AND ITS PURIFICATION.

A Handbook for the Use of Local Authorities, Sanitary Officers, and others interested in Water Supply. By S. RIDEAL, D.Sc. Lond., F.I.C. With numerous Illustrations and Tables. Crown 8vo, cloth. [*Just Published.* **7/6**

"Dr. Rideal's book is both interesting and accurate, and contains a most useful *résumé* of the latest knowledge upon the subject of which it treats. It ought to be of great service to all who are connected with the supply of water for domestic or manufacturing purposes."—*The Engineer.*

"Dealing as clearly as it does with the various ramifications of such an important subject as water and its purification it may be warmly recommended. Local authorities and all engaged in sanitary affairs, and others interested in water supply, will read its pages with profit."—*Lancet.*

RURAL WATER SUPPLY.

A Practical Handbook on the Supply of Water and Construction of Waterworks for Small Country Districts. By ALLAN GREENWELL, A.M.I.C.E., and W. T. CURRY, A.M.I.C.E. Revised Edition. Crown 8vo, cloth **5/0**

"We conscientiously recommend it as a very useful book for those concerned in obtaining water for small districts, giving a great deal of practical information in a small compass."—*Builder.*

THE WATER SUPPLY OF CITIES AND TOWNS.

By WILLIAM HUMBER, A.M. Inst. C.E., and M.Inst. M.E. Imp. 4to, half-bound morocco. (See page 11.) . . . . *Net* **£6 6s.**

THE WATER SUPPLY OF TOWNS AND THE CONSTRUCTION OF WATER-WORKS.

By PROFESSOR W. K. BURTON, A.M. Inst. C.E. Second Edition, Revised and Extended. Royal 8vo, cloth. (See page 10.) **25/0**

WATER ENGINEERING.

A Practical Treatise on the Measurement, Storage, Conveyance, and Utilisation of Water for the Supply of Towns, for Mill Power, and for other Purposes. By C. SLAGG, A.M. Inst. C.E. Second Edition. Crown 8vo, cloth . **7/6**

SANITARY WORK IN SMALL TOWNS AND VILLAGES.

By CHARLES SLAGG, A. M. Inst. C.E. Crown 8vo, cloth **3/0**

SANITARY ARRANGEMENT OF DWELLING-HOUSES.

A Handbook for Householders and Owners of Houses. By A. J. WALLIS-TAYLER, A.M.Inst.C.E. Crown 8vo, cloth **2/6**

"This book will be largely read; it will be of considerable service to the public. It is well arranged, easily read, and for the most part devoid of technical terms."—*Lancet.*

VENTILATION.

A Text-book to the Practice of the Art of Ventilating Buildings. By W. P. BUCHAN, R.P. Crown 8vo, cloth **3/6**

PLUMBING.

A Text-book to the Practice of the Art or Craft of the Plumber. By W. P. BUCHAN, R.P. Seventh Edition, Enlarged. Crown 8vo, cloth . . **3/6**

THE HEALTH OFFICER'S POCKET-BOOK.

A Guide to Sanitary Practice and Law. For Medical Officers of Health, Sanitary Inspectors, Members of Sanitary Authorities, &c. By EDWARD F. WILLOUGHBY, M.D. (Lond.), &c. Fcap. 8vo, cloth **7/6**

"A mine of condensed information of a pertinent and useful kind on the various subjects of which it treats. The matter seems to have been carefully compiled and arranged for facility of reference, and it is well illustrated by diagrams and woodcuts. The different subjects are succinctly but fully and scientifically dealt with."—*The Lancet.*

CARPENTRY, TIMBER, &c.

THE ELEMENTARY PRINCIPLES OF CARPENTRY.

A Treatise on the Pressure and Equilibrium of Timber Framing, the Resistance of Timber, and the Construction of Floors, Arches, Bridges, Roofs, Uniting Iron and Stone with Timber, &c. To which is added an Essay on the Nature and Properties of Timber, &c., with Descriptions of the kinds of Wood used in Building; also numerous Tables of the Scantlings of Timber for different purposes, the Specific Gravities of Materials, &c. By THOMAS TREDGOLD, C.E. With an Appendix of Specimens of Various Roofs of Iron and Stone, Illustrated. Seventh Edition, thoroughly Revised and considerably Enlarged by E. WYNDHAM TARN, M.A., Author of "The Science of Building," &c. With 61 Plates, Portrait of the Author, and several Woodcuts. In One large Vol., 4to, cloth **25/0**

"Ought to be in every architect's and every builder's library."—*Builder.*

"A work whose monumental excellence must commend it wherever skilful carpentry is concerned. The author's principles are rather confirmed than impaired by time. The additional plates are of great intrinsic value."—*Building News.*

WOODWORKING MACHINERY.

Its Rise, Progress, and Construction. With Hints on the Management of Saw Mills and the Economical Conversion of Timber. Illustrated with Examples of Recent Designs by leading English, French, and American Engineers. By M. POWIS BALE, A.M.Inst.C.E., M.I.M.E. Second Edition, Revised, with large Additions, large crown 8vo, 440 pp., cloth **9/0**

"Mr. Bale is evidently an expert on the subject, and he has collected so much information that his book is all-sufficient for builders and others engaged in the conversion of timber."—*Architect.*

"The most comprehensive compendium of wood-working machinery we have seen. The author is a thorough master of his subject."—*Building News.*

SAW MILLS.

Their Arrangement and Management, and the Economical Conversion of Timber. By M. POWIS BALE, A.M.Inst.C.E. Second Edition, Revised. Crown 8vo, cloth. [*Just Published.* **10/6**

"The *administration* of a large sawing establishment is discussed, and the subject examined from a financial standpoint. Hence the size, shape, order, and disposition of saw mills and the like are gone into in detail, and the course of the timber is traced from its reception to its delivery in its converted state. We could not desire a more complete or practical treatise."—*Builder.*

THE CARPENTER'S GUIDE.

Or, Book of Lines for Carpenters; comprising all the Elementary Principles essential for acquiring a knowledge of Carpentry. Founded on the late PETER NICHOLSON'S standard work. A New Edition, Revised by ARTHUR ASHPITEL, F.S.A. Together with Practical Rules on Drawing, by GEORGE PYNE. With 74 Plates, 4to, cloth . . . . **£1 1s.**

A PRACTICAL TREATISE ON HANDRAILING.

Showing New and Simple Methods for Finding the Pitch of the Plank, Drawing the Moulds, Bevelling, Jointing-up, and Squaring the Wreath. By GEORGE COLLINGS. Second Edition, Revised and Enlarged, to which is added A TREATISE ON STAIR-BUILDING. With Plates and Diagrams . . **2/6**

"Will be found of practical utility in the execution of this difficult branch of joinery."—*Builder.*

"Almost every difficult phase of this somewhat intricate branch of joinery is elucidated by the aid of plates and explanatory letterpress."—*Furniture Gazette.*

CIRCULAR WORK IN CARPENTRY AND JOINERY.

A Practical Treatise on Circular Work of Single and Double Curvature. By GEORGE COLLINGS. With Diagrams. Third Edition, 12mo, cloth . **2/6**

"An excellent example of what a book of this kind should be. Cheap in price, clear in definition, and practical in the examples selected."—*Builder.*

THE CABINET-MAKER'S GUIDE TO THE ENTIRE CONSTRUCTION OF CABINET WORK.

Including the Art of Laying Veneers, &c. By RICHARD BITMEAD. 8vo, with numerous Illustrations, wrapper **3/6**

HANDRAILING COMPLETE IN EIGHT LESSONS.

On the Square-Cut System. By J. S. Goldthorp, Head of Building Department, Halifax Technical School. With Eight Plates and over 150 Practical Exercises. 4to, cloth **3/6**

"Likely to be of considerable value to joiners and others who take a pride in good work. The arrangement of the book is excellent. We heartily commend it to teachers and students."—*Timber Trades Journal.*

TIMBER MERCHANT'S and BUILDER'S COMPANION.

Containing New and Copious Tables of the Reduced Weight and Measurement of Deals and Battens, of all sizes, from One to a Thousand Pieces, and the relative Price that each size bears per Lineal Foot to any given Price per Petersburgh Standard Hundred; the Price per Cube Foot of Square Timber to any given Price per Load of 50 Feet, &c., &c. By William Dowsing. Fourth Edition, Revised and Corrected. Crown 8vo, cloth . . . **3/0**

"We are glad to see a fourth edition of these admirable tables, which for correctness and simplicity of arrangement leave nothing to be desired."—*Timber Trades Journal.*

THE PRACTICAL TIMBER MERCHANT.

A Guide for the Use of Building Contractors, Surveyors, Builders, &c., comprising useful Tables for all purposes connected with the Timber Trade, Marks of Wood, Essay on the Strength of Timber, Remarks on the Growth of Timber, &c. By W. Richardson. Second Edition. Fcap. 8vo, cloth . **3/6**

"Contains much valuable information for timber merchants, builders, foresters, and all others connected with the growth, sale, and manufacture of timber."—*Journal of Forestry.*

PACKING-CASE TABLES.

Showing the number of Superficial Feet in Boxes or Packing-Cases, from six inches square and upwards. By W. Richardson, Timber Broker. Third Edition. Oblong 4to, cloth **3/6**

"Invaluable labour-saving tables."—*Ironmonger.*

GUIDE TO SUPERFICIAL MEASUREMENT.

Tables calculated from 1 to 200 inches in length by 1 to 108 inches in breadth. For the use of Architects, Surveyors, Engineers, Timber Merchants, Builders, &c. By James Hawkings. Fourth Edition. Fcap., cloth . **3/6**

"A useful collection of tables to facilitate rapid calculation of surfaces. The exact area of any surface of which the limits have been ascertained can be instantly determined. The book will be found of the greatest utility to all engaged in building operations."—*Scotsman.*

PRACTICAL FORESTRY.

And its Bearing on the Improvement of Estates. By Charles E. Curtis, F.S.I., Professor of Forestry, Field Engineering, and General Estate Management, at the College of Agriculture, Downton. Second Edition, Revised. Crown 8vo, cloth. [*Just Published.* **3/6**

Summary of Contents:—Prefatory Remarks.—Objects of Planting.—Choice of a Forester.—Choice of Soil and Site.—Laying Out of Land for Plantations.—Preparation of the Ground for Planting.—Drainage.—Planting.—Distances and Distribution of Trees in Plantations.—Trees and Ground Game.—Attention after Planting.—Thinning of Plantations.—Pruning of Forest Trees.—Realization.—Methods of Sale.—Measurement of Timber.—Measurement and Valuation of Larch Plantation.—Fire Lines.—Cost of Planting.

"Mr. Curtis has in the course of a series of short pithy chapters afforded much information of a useful and practical character on the planting and subsequent treatment of trees."—*Illustrated Carpenter and Builder.*

THE ELEMENTS OF FORESTRY.

Designed to afford Information concerning the Planting and Care of Forest Trees for Ornament or Profit, with suggestions upon the Creation and Care of Woodlands. By F. B. Hough. Large crown 8vo, cloth . . . **10/0**

THE TIMBER IMPORTER'S, TIMBER MERCHANT'S, AND BUILDER'S STANDARD GUIDE.

By Richard E. Grandy. Comprising:—An Analysis of Deal Standards, Home and Foreign, with Comparative Values and Tabular Arrangements for fixing Net Landed Cost on Baltic and North American Deals, including all intermediate Expenses, Freight, Insurance, &c.; together with copious Information for the Retailer and Builder. Third Edition. 12mo, cloth . . **2/0**

DECORATIVE ARTS, &c.

SCHOOL OF PAINTING FOR THE IMITATION OF WOODS AND MARBLES.

As Taught and Practised by A. R. VAN DER BURG and P. VAN DER BURG, Directors of the Rotterdam Painting Institution. Royal folio, 18½ by 12½ in., Illustrated with 24 full-size Coloured Plates; also 12 plain Plates, comprising 154 Figures. Third Edition, cloth. [*Just Published.* **£1 11s. 6d.**

LIST OF PLATES:—1. VARIOUS TOOLS REQUIRED FOR WOOD PAINTING.—2, 3. WALNUT; PRELIMINARY STAGES OF GRAINING AND FINISHED SPECIMEN.—4. TOOLS USED FOR MARBLE PAINTING AND METHOD OF MANIPULATION.—5, 6. ST. REMI MARBLE; EARLIER OPERATIONS AND FINISHED SPECIMEN.—7. METHODS OF SKETCHING DIFFERENT GRAINS, KNOTS, &c.—8, 9. ASH: PRELIMINARY STAGES AND FINISHED SPECIMEN.—10. METHODS OF SKETCHING MARBLE GRAINS.—11, 12. BRECHE MARBLE; PRELIMINARY STAGES OF WORKING AND FINISHED SPECIMEN.—13. MAPLE; METHODS OF PRODUCING THE DIFFERENT GRAINS.—14, 15. BIRD'S-EYE MAPLE: PRELIMINARY STAGES AND FINISHED SPECIMEN.—16. METHODS OF SKETCHING THE DIFFERENT SPECIES OF WHITE MARBLE.—17, 18. WHITE MARBLE; PRELIMINARY STAGES OF PROCESS AND FINISHED SPECIMEN.—19. MAHOGANY; SPECIMENS OF VARIOUS GRAINS AND METHODS OF MANIPULATION.—20, 21. MAHOGANY: EARLIER STAGES AND FINISHED SPECIMEN.—22, 23, 24. SIENNA MARBLE; VARIETIES OF GRAIN, PRELIMINARY STAGES AND FINISHED SPECIMEN.—25, 26, 27. JUNIPER WOOD; METHODS OF PRODUCING GRAIN, &c.; PRELIMINARY STAGES AND FINISHED SPECIMEN.—28, 29, 30. VERT DE MER MARBLE: VARIETIES OF GRAIN AND METHODS OF WORKING, UNFINISHED AND FINISHED SPECIMENS.—31, 32, 33. OAK; VARIETIES OF GRAIN, TOOLS EMPLOYED AND METHODS OF MANIPULATION, PRELIMINARY STAGES AND FINISHED SPECIMEN.—34, 35, 36. WAULSORT MARBLE; VARIETIES OF GRAIN, UNFINISHED AND FINISHED SPECIMENS.

"Those who desire to attain skill in the art of painting woods and marbles will find advantage in consulting this book. . . . Some of the Working Men's Clubs should give their young men the opportunity to study it."—*Builder.*

"A comprehensive guide to the art. The explanations of the processes, the manipulation and management of the colours, and the beautifully executed plates will not be the least valuable to the student who aims at making his work a faithful transcript of nature."—*Building News.*

"Students and novices are fortunate who are able to become the possessors of so noble a work."—*The Architect.*

ELEMENTARY DECORATION.

A Guide to the Simpler Forms of Everyday Art. Together with PRACTICAL HOUSE DECORATION. By JAMES W. FACEY. With numerous Illustrations. In One Vol., strongly half-bound **5/0**

HOUSE PAINTING, GRAINING, MARBLING, AND SIGN WRITING.

A Practical Manual of. By ELLIS A. DAVIDSON. Seventh Edition. With Coloured Plates and Wood Engravings. 12mo, cloth boards . . . **6/0**

"A mass of information of use to the amateur and of value to the practical man."—*English Mechanic.*

THE DECORATOR'S ASSISTANT.

A Modern Guide for Decorative Artists and Amateurs, Painters, Writers, Gilders, &c. Containing upwards of 600 Receipts, Rules, and Instructions; with a variety of Information for General Work connected with every Class of Interior and Exterior Decorations, &c. Seventh Edition. 152 pp., cr. 8vo. **1/0**

"Full of receipts of value to decorators, painters, gilders, &c. The book contains the gist of larger treatises on colour and technical processes. It would be difficult to meet with a work so full of varied information on the painter's art."—*Building News.*

MARBLE DECORATION

And the Terminology of British and Foreign Marbles. A Handbook for Students. By GEORGE H. BLAGROVE, Author of "Shoring and its Application," &c. With 28 Illustrations. Crown 8vo, cloth **3/6**

"This most useful and much wanted handbook should be in the hands of every architect and builder."—*Building World.*

"A carefully and usefully written treatise; the work is essentially practical."—*Scotsman.*

DELAMOTTE'S WORKS ON ALPHABETS AND ILLUMINATION.

ORNAMENTAL ALPHABETS, ANCIENT & MEDIÆVAL.

From the Eighth Century, with Numerals; including Gothic, Church-Text, large and small, German, Italian, Arabesque, Initials for Illumination, Monograms, Crosses, &c., &c., for the use of Architectural and Engineering Draughtsmen, Missal Painters, Masons, Decorative Painters, Lithographers, Engravers, Carvers, &c., &c. Collected and Engraved by F. DELAMOTTE, and printed in Colours. New and Cheaper Edition. Royal 8vo, oblong, ornamental boards **2/6**

"For those who insert enamelled sentences round gilded chalices, who blazon shop legends over shop-doors, who letter church walls with pithy sentences from the Decalogue, this book will be useful."—*Athenæum.*

MODERN ALPHABETS, PLAIN AND ORNAMENTAL.

Including German, Old English, Saxon, Italic, Perspective, Greek, Hebrew, Court Hand, Engrossing, Tuscan, Riband, Gothic, Rustic, and Arabesque; with several Original Designs, and an Analysis of the Roman and Old English Alphabets, large and small, and Numerals, for the use of Draughtsmen, Surveyors, Masons, Decorative Painters, Lithographers, Engravers, Carvers, &c. Collected and Engraved by F. DELAMOTTE, and printed in Colours. New and Cheaper Edition. Royal 8vo, oblong, ornamental boards . **2/6**

"There is comprised in it every possible shape into which the letters of the alphabet and numerals can be formed, and the talent which has been expended in the conception of the various plain and ornamental letters is wonderful."—*Standard.*

MEDIÆVAL ALPHABETS AND INITIALS FOR ILLUMINATORS.

By F. G. DELAMOTTE. Containing 21 Plates and Illuminated Title, printed in Gold and Colours. With an Introduction by J. WILLIS BROOKS. Fourth and Cheaper Edition. Small 4to, ornamental boards **4/0**

"A volume in which the letters of the alphabet come forth glorified in gilding and all the colours of the prism interwoven and intertwined and intermingled."—*Sun.*

A PRIMER OF THE ART OF ILLUMINATION.

For the Use of Beginners; with a Rudimentary Treatise on the Art, Practical Directions for its Exercise, and Examples taken from Illuminated MSS., printed in Gold and Colours. By F. DELAMOTTE. New and Cheaper Edition. Small 4to, ornamental boards **6/0**

"The examples of ancient MSS. recommended to the student, which, with much good sense, the author chooses from collections accessible to all, are selected with judgment and knowledge as well as taste."—*Athenæum.*

THE EMBROIDERER'S BOOK OF DESIGN.

Containing Initials, Emblems, Cyphers, Monograms, Ornamental Borders, Ecclesiastical Devices, Mediæval and Modern Alphabets, and National Emblems. Collected by F. DELAMOTTE, and printed in Colours. Oblong royal 8vo, ornamental wrapper **1/6**

"The book will be of great assistance to ladies and young children who are endowed with the art of plying the needle in this most ornamental and useful pretty work."—*East Anglian Times*

INSTRUCTIONS IN WOOD-CARVING FOR AMATEURS.

With Hints on Design. By A LADY. With 10 Plates. New and Cheaper Edition. Crown 8vo, in emblematic wrapper **2/0**

"The handicraft of the wood-carver, so well as a book can impart it, may be learnt from 'A Lady's' publication."—*Athenæum.*

PAINTING POPULARLY EXPLAINED.

By THOMAS JOHN GULLICK, Painter, and JOHN TIMBS, F.S.A. Including Fresco, Oil, Mosaic, Water-Colour, Water-Glass, Tempera, Encaustic, Miniature, Painting on Ivory, Vellum, Pottery, Enamel, Glass, &c. Fifth Edition. Crown 8vo, cloth **5/0**

*** *Adopted as a Prize Book at South Kensington.*

"Much may be learned, even by those who fancy they do not require to be taught, from the careful perusal of this unpretending but comprehensive treatise."—*Art Journal.*

NATURAL SCIENCE, &c.

THE VISIBLE UNIVERSE.

Chapters on the Origin and Construction of the Heavens. By J. E. GORE, F.R.A.S., Author of "Star Groups," &c. Illustrated by 6 Stellar Photographs and 12 Plates. Demy 8vo, cloth **16/0**

"A valuable and lucid summary of recent astronomical theory, rendered more valuable and attractive by a series of stellar photographs and other illustrations."—*The Times.*

"In presenting a clear and concise account of the present state of our knowledge Mr. Gore has made a valuable addition to the literature of the subject."—*Nature.*

"Mr. Gore's 'Visible Universe' is one of the finest works on astronomical science that have recently appeared in our language. In spirit and in method it is scientific from cover to cover, but the style is so clear and attractive that it will be as acceptable and as readable to those who make no scientific pretensions as to those who devote themselves specially to matters astronomical."—*Leeds Mercury.*

STAR GROUPS.

A Student's Guide to the Constellations. By J. ELLARD GORE, F.R.A.S., M.R.I.A., &c., Author of "The Visible Universe," "The Scenery of the Heavens," &c. With 30 Maps. Small 4to, cloth **5/0**

"The volume contains thirty maps showing stars of the sixth magnitude—the usual naked-eye limit—and each is accompanied by a brief commentary adapted to facilitate recognition and bring to notice objects of special interest. For the purpose of a preliminary survey of the 'midnight pomp' of the heavens nothing could be better than a set of delineations averaging scarcely twenty square inches in area and including nothing that cannot at once be identified."—*Saturday Review.*

AN ASTRONOMICAL GLOSSARY.

Or, Dictionary of Terms used in Astronomy. With Tables of Data and Lists of Remarkable and Interesting Celestial Objects. By J. ELLARD GORE, F.R.A.S., Author of "The Visible Universe," &c. Small crown 8vo, cloth. **2/6**

"A very useful little work for beginners in astronomy, and not to be despised by more advanced students."—*The Times.*

"A very handy book . . . the utility of which is much increased by its valuable tables of astronomical data."—*Athenæum*

THE MICROSCOPE.

Its Construction and Management. Including Technique, Photo-micrography, and the Past and Future of the Microscope. By Dr. HENRI VAN HEURCK. Re-Edited and Augmented from the Fourth French Edition, and Translated by WYNNE E. BAXTER, F.G.S. 400 pp., with upwards of 250 Woodcuts, imp. 8vo, cloth **18/0**

"A translation of a well-known work, at once popular and comprehensive."—*Times.*

"The translation is as felicitous as it is accurate."—*Nature.*

ASTRONOMY.

By the late Rev. ROBERT MAIN, M.A., F.R.S. Third Edition, Revised by WILLIAM THYNNE LYNN, B.A., F.R.A.S., formerly of the Royal Observatory, Greenwich. 12mo, cloth **2/0**

"A sound and simple treatise, very carefully edited, and a capital book for beginners."—*Knowledge.*

"Accurately brought down to the requirements of the present time by Mr. Lynn."—*Educational Times.*

A MANUAL OF THE MOLLUSCA.

A Treatise on Recent and Fossil Shells. By S. P. WOODWARD, A.L.S., F.G.S. With an Appendix on RECENT AND FOSSIL CONCHOLOGICAL DISCOVERIES, by RALPH TATE, A.L.S., F.G.S. With 23 Plates and upwards of 300 Woodcuts. Reprint of Fourth Edition (1880). Crown 8vo, cloth **7/6**

"A most valuable storehouse of conchological and geological information."—*Science Gossip.*

THE TWIN RECORDS OF CREATION.

Or, Geology and Genesis, their Perfect Harmony and Wonderful Concord. By G. W. V. LE VAUX. 8vo, cloth **5/0**

"A valuable contribution to the evidences of Revelation, and disposes very conclusively of the arguments of those who would set God's Works against God's Word. No real difficulty is shirked, and no sophistry is left unexposed."—*The Rock.*

HANDBOOK OF MECHANICS.

By Dr. LARDNER. Enlarged and re-written by BENJAMIN LOEWY, F.R.A.S. 378 Illustrations. Post 8vo, cloth 6/0

"The perspicuity of the original has been retained, and chapters which had become obsolete have been replaced by others of more modern character. The explanations throughout are studiously popular, and care has been taken to show the application of the various branches of physics to the industrial arts, and to the practical business of life."—*Mining Journal.*

HANDBOOK OF HYDROSTATICS AND PNEUMATICS.

By Dr. LARDNER. New Edition, Revised and Enlarged by BENJAMIN LOEWY, F.R.A.S. With 236 Illustrations. Post 8vo, cloth 5/0

"For those 'who desire to attain an accurate knowledge of physical science without the profound methods of mathematical investigation,' this work is well adapted."—*Chemical News.*

HANDBOOK OF HEAT.

By Dr. LARDNER. Edited and re-written by BENJAMIN LOEWY, F.R.A.S., &c. 117 Illustrations. Post 8vo, cloth 6/0

"The style is always clear and precise, and conveys instruction without leaving any cloudiness or lurking doubts behind."—*Engineering.*

HANDBOOK OF OPTICS.

By Dr. LARDNER. New Edition. Edited by T. OLVER HARDING, B.A. Lond. With 298 Illustrations. Small 8vo, 448 pp., cloth 5/0

"Written by one of the ablest English scientific writers, beautifully and elaborately illustrated." —*Mechanics' Magazine.*

ELECTRICITY, MAGNETISM, AND ACOUSTICS.

By Dr. LARDNER. Edited by GEO. CAREY FOSTER, B.A., F.C.S. With 400 Illustrations. Small 8vo, cloth 5/0

"The book could not have been entrusted to any one better calculated to preserve the terse and lucid style of Lardner, while correcting his errors and bringing up his work to the present state of scientific knowledge."—*Popular Science Review.*

HANDBOOK OF ASTRONOMY.

By Dr. LARDNER. Fourth Edition. Revised and Edited by EDWIN DUNKIN, F.R.A.S., Royal Observatory, Greenwich. With 38 Plates and upwards of 100 Woodcuts. 8vo, cloth 9/6

"Probably no other book contains the same amount of information in so compendious and well arranged a form—certainly none at the price at which this is offered to the public."—*Athenæum.*

"We can do no other than pronounce this work a most valuable manual of astronomy, and we strongly recommend it to all who wish to acquire a general—but at the same time correct—acquaintance with this sublime science."—*Quarterly Journal of Science*

MUSEUM OF SCIENCE AND ART.

Edited by Dr. LARDNER. With upwards of 1,200 Engravings on Wood. In Six Double Volumes, £1 1s. in a new and elegant cloth binding; or handsomely bound in half-morocco . . . . £1 11s. 6d.

"A cheap and interesting publication, alike informing and attractive. The papers combine subjects of importance and great scientific knowledge, considerable inductive powers, and a popular style of treatment."—*Spectator.*

Separate books formed from the above.

Common Things Explained. 5s.	**Steam and its Uses.** 2s. cloth.
The Microscope. 2s. cloth.	**Popular Astronomy.** 4s. 6d. cloth.
Popular Geology. 2s. 6d. cloth.	**The Bee and White Ants.** 2s. cloth.
Popular Physics. 2s. 6d. cloth.	**The Electric Telegraph.** 1s. 6d.

NATURAL PHILOSOPHY FOR SCHOOLS.

By Dr. LARDNER. Fcap. 8vo 3/6

"A very convenient class book for junior students in private schools."—*British Quarterly Review.*

ANIMAL PHYSIOLOGY FOR SCHOOLS.

By Dr. LARDNER. Fcap. 8vo 3/6

"Clearly written, well arranged, and excellently illustrated."—*Gardener's Chronicle.*

THE ELECTRIC TELEGRAPH.

By Dr. LARDNER. Revised by E. B. BRIGHT, F.R.A.S. Fcap. 8vo. . 2/6

One of the most readable books extant on the Electric Telegraph.'—*English Mechanic.*

CHEMICAL MANUFACTURES, CHEMISTRY, &c.

THE GAS ENGINEER'S POCKET-BOOK.

Comprising Tables, Notes and Memoranda relating to the Manufacture, Distribution and Use of Coal Gas and the Construction of Gas Works. By H. O'CONNOR, A.M.Inst.C.E., 450 pp., crown 8vo, fully Illustrated, leather. [*Just Published.* **10/6**

"The book contains a vast amount of information. The author goes consecutively through the engineering details and practical methods involved in each of the different processes or parts of a gas-works. He has certainly succeeded in making a compilation of hard matters of fact absolutely interesting to read."—*Gas World.*

"A useful work of reference for the gas engineer and all interested in lighting or heating by gas, while the analyses of the various descriptions of gas will be of value to the technical chemist. All matter in any way connected with the manufacture and use of gas is dealt with. The book has evidently been carefully compiled, and certainly constitutes a useful addition to gas literature."—*Builder.*

"The volume contains a great quantity of specialised information, compiled, we believe, from trustworthy sources, which should make it of considerable value to those for whom it is specifically produced."—*Engineer.*

LIGHTING BY ACETYLENE

Generators, Burners, and Electric Furnaces. By WILLIAM E. GIBBS, M.E. With 66 Illustrations. Crown 8vo, cloth. [*Just Published.* **7/6**

ENGINEERING CHEMISTRY.

A Practical Treatise for the Use of Analytical Chemists, Engineers, Iron Masters, Iron Founders, Students and others. Comprising Methods of Analysis and Valuation of the Principal Materials used in Engineering Work, with Analyses, Examples and Suggestions. By H. J. PHILLIPS, F.I.C., F.C.S. Second Edition, Enlarged. Crown 8vo, 400 pp., with Illustrations, cloth **10/6**

"In this work the author has rendered no small service to a numerous body of practical men. . . . The analytical methods may be pronounced most satisfactory, being as accurate as the despatch required of engineering chemists permits."—*Chemical News.*

"Full of good things. As a handbook of technical analysis, it is very welcome."—*Builder.*

"The analytical methods given are, as a whole, such as are likely to give rapid and trustworthy results in experienced hands. . . . There is much excellent descriptive matter in the work, the chapter on 'Oils and Lubrication' being specially noticeable in this respect."—*Engineer.*

NITRO-EXPLOSIVES.

A Practical Treatise concerning the Properties, Manufacture, and Analysis of Nitrated Substances, including the Fulminates, Smokeless Powders, and Celluloid. By P. G. SANFORD, F.I.C., Consulting Chemist to the Cotton Powder Company, &c. With Illustrations. Crown 8vo, cloth. [*Just Published.* **9/0**

"Any one having the requisite apparatus and materials could make nitro-glycerine or gun-cotton, to say nothing of other explosives, by the aid of the instructions in this volume. This is one of the very few text-books in which can be found just what is wanted. Mr. Sanford goes through the whole list of explosives commonly used, names any given explosive, and tells us of what it is composed and how it is manufactured. The book is excellent throughout."—*Engineer.*

A HANDBOOK ON MODERN EXPLOSIVES.

A Practical Treatise on the Manufacture and Use of Dynamite, Gun-Cotton, Nitro-Glycerine and other Explosive Compounds, including Collodion-Cotton. With Chapters on Explosives in Practical Application. By M. EISSLER, Mining Engineer and Metallurgical Chemist. Second Edition, Enlarged. With 150 Illustrations. Crown 8vo, cloth. [*Just Published.* **12/6**

"Useful not only to the miner, but also to officers of both services to whom blasting and the use of explosives generally may at any time become a necessary auxiliary."—*Nature.*

DANGEROUS GOODS.

Their Sources and Properties, Modes of Storage and Transport. With Notes and Comments on Accidents arising therefrom, together with the Government and Railway Classifications, Acts of Parliament, &c. A Guide for the Use of Government and Railway Officials, Steamship Owners, Insurance Companies and Manufacturers, and Users of Explosives and Dangerous Goods. By H. JOSHUA PHILLIPS, F.I.C., F.C.S. Crown 8vo, 374 pp., cloth . . **9/0**

"Merits a wide circulation, and an intelligent, appreciative study."—*Chemical News.*

A MANUAL OF THE ALKALI TRADE.

Including the Manufacture of Sulphuric Acid, Sulphate of Soda, and Bleaching Powder. By JOHN LOMAS, Alkali Manufacturer, Newcastle-upon-Tyne and London. 390 pp. of Text. With 232 Illustrations and Working Drawings, Second Edition, with Additions. Super-royal 8vo, cloth . . **£1 10s.**

"This book is written by a manufacturer for manufacturers. The working details of the most approved forms of apparatus are given, and these are accompanied by no less than 232 wood engravings, all of which may be used for the purposes of construction. Every step in the manufacture is very fully described in this manual, and each improvement explained."—*Athenæum.*

"We find not merely a sound and luminous explanation of the chemical principles of the trade, but a notice of numerous matters which have a most important bearing on the successful conduct of alkali works, but which are generally overlooked by even experienced technological authors."—*Chemical Review.*

THE BLOWPIPE IN CHEMISTRY, MINERALOGY, AND GEOLOGY.

Containing all known Methods of Anhydrous Analysis, many Working Examples, and Instructions for Making Apparatus. By Lieut.-Colonel W. A. ROSS, R.A., F.G.S. With 120 Illustrations. Second Edition, Enlarged. Crown 8vo, cloth **5/0**

"The student who goes conscientiously through the course of experimentation here laid down will gain a better insight into inorganic chemistry and mineralogy than if he had 'got up' any of the best text-books of the day, and passed any number of examinations in their contents."—*Chemical News.*

THE MANUAL OF COLOURS AND DYE-WARES.

Their Properties, Applications, Valuations, Impurities and Sophistications. For the Use of Dyers, Printers, Drysalters, Brokers, &c. By J. W. SLATER. Second Edition, Revised and greatly Enlarged. Crown 8vo, cloth . **7/6**

"A complete encyclopædia of the *materia tinctoria.* The information given respecting each article is full and precise, and the methods of determining the value of articles such as these, so liable to sophistication, are given with clearness, and are practical as well as valuable."—*Chemist and Druggist.*

"There is no other work which covers precisely the same ground. To students preparing for examinations in dyeing and printing it will prove exceedingly useful."—*Chemical News.*

A HANDY BOOK FOR BREWERS.

Being a Practical Guide to the Art of Brewing and Malting. Embracing the Conclusions of Modern Research which bear upon the Practice of Brewing. By HERBERT EDWARDS WRIGHT, M.A. Second Edition, Enlarged. Crown 8vo, 530 pp., cloth. [*Just Published.* **12/6**

"May be consulted with advantage by the student who is preparing himself for examinational tests, while the scientific brewer will find in it a *résumé* of all the most important discoveries of modern times. The work is written throughout in a clear and concise manner, and the author takes great care to discriminate between vague theories and well-established facts."—*Brewers' Journal.*

"We have great pleasure in recommending this handy book, and have no hesitation in saying that it is one of the best—if not the best—which has yet been written on the subject of beer-brewing in this country; it should have a place on the shelves of every brewer's library."—*Brewers' Guardian.*

"Although the requirements of the student are primarily considered, an acquaintance of half-an-hour's duration cannot fail to impress the practical brewer with the sense of having found a trustworthy guide and practical counsellor in brewery matters."—*Chemical Trade Journal.*

FUELS: SOLID, LIQUID, AND GASEOUS.

Their Analysis and Valuation. For the Use of Chemists and Engineers. By H. J. PHILLIPS, F.C.S., formerly Analytical and Consulting Chemist to the G.E. Rlwy. Third Edition, Revised and Enlarged. Crown 8vo, cloth **2/0**

"Ought to have its place in the laboratory of every metallurgical establishment and wherever fuel is used on a large scale."—*Chemical News.*

THE ARTISTS' MANUAL OF PIGMENTS.

Showing their Composition, Conditions of Permanency, Non-Permanency, and Adulterations; Effects in Combination with Each Other and with Vehicles; and the most Reliable Tests of Purity. By H. C. STANDAGE. crown 8vo. **2/6**

"This work is indeed *multum-in-parvo*, and we can, with good conscience, recommend it to all who come in contact with pigments, whether as makers, dealers, or users."—*Chemical Review.*

A POCKET-BOOK OF MENSURATION AND GAUGING.

Containing Tables, Rules, and Memoranda for Revenue Officers, Brewers, Spirit Merchants, &c. By J. B. MANT, Inland Revenue. Second Edition, Revised. 18mo, leather **4/0**

"This handy and useful book is adapted to the requirements of the Inland Revenue Department, and will be a favourite book of reference."—*Civilian.*

"Should be in the hands of every practical brewer."—*Brewers' Journal.*

INDUSTRIAL ARTS, TRADES, AND MANUFACTURES.

MODERN CYCLES.

A Practical Handbook on their Construction and Repair. By A. J. WALLIS-TAYLER, A. M. Inst. C. E. Author of "Refrigerating Machinery," &c. With upwards of 300 Illustrations. Crown 8vo, cloth. [*Just Published.* **10/6**

"The large trade that is done in the component parts of bicycles has placed in the way of men mechanically inclined extraordinary facilities for building bicycles for their own use. . The book will prove a valuable guide for all those who aspire to the manufacture or repair of their own machines."—*The Field.*

"A most comprehensive and up-to-date treatise."—*The Cycle.*

"A very useful book, which is quite entitled to rank as a standard work for students of cycle construction."—*Wheeling.*

TEA MACHINERY AND TEA FACTORIES.

A Descriptive Treatise on the Mechanical Appliances required on Tea Plantations in the Preparation of Tea for the Market. By A. J. W. TAYLER, A.M. Inst. C.E. With about 200 Illustrations. Medium 8vo.

[*Nearly Ready. Price, about* **25/0**

TEA PLANTING AND MANUFACTURE

(A Text Book of). Comprising Chapters on the History and Development of the Industry, the Cultivation of the Plant, the Preparation of the Leaf for the Market, &c. By DAVID CROLE, late of the Jokai Tea Company, &c. With Plates and other Illustrations. Medium 8vo, cloth **16/0**

COTTON MANUFACTURE.

A Manual of Practical Instruction of the Processes of Opening, Carding, Combing, Drawing, Doubling and Spinning of Cotton, the Methods of Dyeing, &c. For the Use of Operatives, Overlookers, and Manufacturers. By JOHN LISTER, Technical Instructor, Pendleton. 8vo, cloth . . **7/6**

"A distinct advance in the literature of cotton manufacture."—*Machinery.*

"It is thoroughly reliable, fulfilling nearly all the requirements desired."—*Glasgow Herald.*

FLOUR MANUFACTURE.

A Treatise on Milling Science and Practice. By FRIEDRICH KICK, Imperial Regierungsrath, Professor of Mechanical Technology in the Imperial German Polytechnic Institute, Prague. Translated from the Second Enlarged and Revised Edition with Supplement. By H. H. P. POWLES, Assoc. Memb. Institution of Civil Engineers. Nearly 400 pp. Illustrated with 28 Folding Plates, and 167 Woodcuts. Royal 8vo, cloth . . . . . . **£1 5s.**

"This valuable work is, and will remain, the standard authority on the science of milling. . . . The miller who has read and digested this work will have laid the foundation, so to speak, of a successful career; he will have acquired a number of general principles which he can proceed to apply. In this handsome volume we at last have the accepted text-book of modern milling in good, sound English, which has little, if any, trace of the German idiom."—*The Miller.*

CEMENTS, PASTES, GLUES, AND GUMS.

A Practical Guide to the Manufacture and Application of the various Agglutinants required in the Building, Metal-Working, Wood-Working, and Leather-Working Trades, and for Workshop, Laboratory or Office Use. With upwards of 900 Recipes and Formulæ. By H. C. STANDAGE, Chemist. Third Edition. Crown 8vo, cloth. [*Just Published.* **2/0**

"We have pleasure in speaking favourably of this volume. So far as we have had experience, which is not inconsiderable, this manual is trustworthy."—*Athenæum.*

"As a revelation of what are considered trade secrets, this book will arouse an amount of curiosity among the large number of industries it touches."—*Daily Chronicle.*

THE ART OF SOAP-MAKING.

A Practical Handbook of the Manufacture of Hard and Soft Soaps, Toilet Soaps, &c. Including many New Processes, and a Chapter on the Recovery of Glycerine from Waste Leys. By ALX. WATT. Fifth Edition, Revised, with an Appendix on Modern Candlemaking. Crown 8vo, cloth . . . **7/6**

"The work will prove very useful, not merely to the technological student, but to the practical soap boiler who wishes to understand the theory of his art."—*Chemical News.*

"A thoroughly practical treatise on an art which has almost no literature in our language. We congratulate the author on the success of his endeavour to fill a void in English technica literature."—*Nature.*

PRACTICAL PAPER-MAKING.

A Manual for Paper-Makers and Owners and Managers of Paper-Mills. With Tables, Calculations, &c. By G. CLAPPERTON, Paper-Maker. With Illustrations of Fibres from Micro-Photographs. Crown 8vo, cloth . . **5/0**

"The author caters for the requirements of responsible mill hands, apprentices, &c., whilst his manual will be found of great service to students of technology, as well as to veteran paper-makers and mill owners. The illustrations form an excellent feature."—*The World's Paper Trade Review.*

"We recommend everybody interested in the trade to get a copy of this thoroughly practical book."—*Paper Making.*

THE ART OF PAPER-MAKING.

A Practical Handbook of the Manufacture of Paper from Rags, Esparto, Straw, and other Fibrous Materials. Including the Manufacture of Pulp from Wood Fibre, with a Description of the Machinery and Appliances used. To which are added Details of Processes for Recovering Soda from Waste Liquors. By ALEXANDER WATT, Author of "The Art of Soap-Making." With Illustrations. Crown 8vo, cloth **7/6**

"It may be regarded as the standard work on the subject. The book is full of valuable information. The 'Art of Paper-Making' is in every respect a model of a text-book, either for a technical class, or for the private student."—*Paper and Printing Trades Journal.*

A TREATISE ON PAPER

For Printers and Stationers. With an Outline of Paper Manufacture; Complete Tables of Sizes, and Specimens of Different Kinds of Paper. By RICHARD PARKINSON, late of the Manchester Technical School. Demy 8vo, cloth. [*Just Published.* **3/6**

THE ART OF LEATHER MANUFACTURE.

Being a Practical Handbook, in which the Operations of Tanning, Currying, and Leather Dressing are fully Described, and the Principles of Tanning Explained, and many Recent Processes Introduced; as also Methods for the Estimation of Tannin, and a Description of the Arts of Glue Boiling, Gut Dressing, &c. By ALEXANDER WATT, Author of "Soap-Making," &c. Fourth Edition. Crown 8vo, cloth **9/0**

"A sound, comprehensive treatise on tanning and its accessories. The book is an eminently valuable production, which redounds to the credit of both author and publishers."—*Chemical Review.*

THE ART OF BOOT AND SHOE MAKING.

A Practical Handbook, including Measurement, Last-Fitting, Cutting-Out, Closing and Making, with a Description of the most approved Machinery Employed. By JOHN B. LENO, late Editor of *St. Crispin*, and *The Boot and Shoe-Maker.* 12mo, cloth. **2/0**

WOOD ENGRAVING.

A Practical and Easy Introduction to the Study of the Art. By W. N. BROWN. 12mo, cloth 1/6

"The book is clear and complete, and will be useful to any one wanting to understand the first elements of the beautiful art of wood engraving."—*Graphic.*

MODERN HOROLOGY, IN THEORY AND PRACTICE.

Translated from the French of CLAUDIUS SAUNIER, ex-Director of the School of Horology at Macon, by JULIEN TRIPPLIN, F.R.A.S., Besancon Watch Manufacturer, and EDWARD RIGG, M.A., Assayer in the Royal Mint. With Seventy-eight Woodcuts and Twenty-two Coloured Copper Plates. Second Edition. Super-royal 8vo, cloth, £2 2s.; half-calf . . . £2 10s.

"There is no horological work in the English language at all to be compared to this production of M. Saunier's for clearness and completeness. It is alike good as a guide for the student and as a reference for the experienced horologist and skilled workman."—*Horological Journal.*

"The latest, the most complete, and the most reliable of those literary productions to which continental watchmakers are indebted for the mechanical superiority over their English brethren—in fact, the Book of Books, is M. Saunier's 'Treatise.'"—*Watchmaker, Jeweller, and Silversmith.*

THE WATCH ADJUSTER'S MANUAL.

A Practical Guide for the Watch and Chronometer Adjuster in Making, Springing, Timing and Adjusting for Isochronism, Positions and Temperatures. By C. E. FRITTS. 370 pp., with Illustrations, 8vo, cloth . . . 16/0

THE WATCHMAKER'S HANDBOOK.

Intended as a Workshop Companion for those engaged in Watchmaking and the Allied Mechanical Arts. Translated from the French of CLAUDIUS SAUNIER, and enlarged by JULIEN TRIPPLIN, F.R.A.S., and EDWARD RIGG, M.A., Assayer in the Royal Mint. Third Edition. 8vo, cloth. 9/0

"Each part is truly a treatise in itself. The arrangement is good and the language is clear and concise. It is an admirable guide for the young watchmaker."—*Engineering.*

"It is impossible to speak too highly of its excellence. It fulfils every requirement in a handbook intended for the use of a workman. Should be found in every workshop."—*Watch and Clockmaker.*

A HISTORY OF WATCHES & OTHER TIMEKEEPERS.

By JAMES F. KENDAL, M.B.H. Inst. Boards, 1/6; or cloth, gilt . 2/6

"The best which has yet appeared on this subject in the English language."—*Industries.*

"Open the book where you may, there is interesting matter in it concerning the ingenious devices of the ancient or modern horologer."—*Saturday Review.*

ELECTRO-DEPOSITION.

A Practical Treatise on the Electrolysis of Gold, Silver, Copper, Nickel, and other Metals and Alloys. With Descriptions of Voltaic Batteries, Magneto and Dynamo-Electric Machines, Thermopiles, and of the Materials and Processes used in every Department of the Art, and several Chapters on ELECTRO-METALLURGY. By ALEXANDER WATT, Author of "Electro-Metallurgy," &c. Third Edition, Revised. Crown 8vo, cloth . . 9/0

"Eminently a book for the practical worker in electro-deposition. It contains practical descriptions of methods, processes and materials, as actually pursued and used in the workshop."—*Engineer.*

ELECTRO-METALLURGY.

Practically Treated. By ALEXANDER WATT. Tenth Edition, including the most recent Processes. 12mo, cloth 3/6

"From this book both amateur and artisan may learn everything necessary for the successful prosecution of electroplating."—*Iron.*

JEWELLER'S ASSISTANT IN WORKING IN GOLD.

A Practical Treatise for Masters and Workmen, Compiled from the Experience of Thirty Years' Workshop Practice. By GEORGE E. GEE, Author of "The Goldsmith's Handbook," &c. Crown 8vo, cloth 7/6

"This manual of technical education is apparently destined to be a valuable auxiliary to a handicraft which is certainly capable of great improvement."—*The Times.*

ELECTROPLATING.

A Practical Handbook on the Deposition of Copper, Sil\ Nickel, Gold, Aluminium, Brass, Platinum, &c., &c. By J. W. URQUHA ... C.E. Fourth Edition, Revised. Crown 8vo, cloth [*Just Published.* **5/0**

"An excellent practical manual."—*Engineering.*

"An excellent work, giving the newest information."—*Horological Journal.*

ELECTROTYPING.

The Reproduction and Multiplication of Printing Surfaces and Works of Art by the Electro-Deposition of Metals. By J. W. URQUHART, C.E. Crown 8vo, cloth **5/0**

"The book is thoroughly practical; the reader is, therefore, conducted through the leading laws of electricity, then through the metals used by electrotypers, the apparatus, and the depositing processes, up to the final preparation of the work."—*Art Journal.*

GOLDSMITH'S HANDBOOK.

...rnal. GEORGE E. GEE, Jeweller, &c. Fifth Edition. 12mo, cloth . . **3/0**

SILVERS...H'S HANDBOOK.

...sound educator, and will be generally accepted as an authority."—*Horological*

By GEORGE E. GEE, Jeweller, &c. Third Edition, with numerous Illustrations. 12mo, c... . . . . **3/0**

"The chief merit ... is its practical character. . . . The workers in the trade will speedily discover its merit ... own to study it."—*English Mechanic.*

*** *The abo... ...er, strongl... half-bound, price 7s.*

SHEET METAL ... OR.

Comprising a Se... Pr...
Describing the V...
Tin-Plate Worker...
greatly Enlarged ...
with 430 Illustratio...

BREAD & BISC...
ASSISTANT.

Including a large v... ...h R
Bread-making. By R... ...n. Cr...

"A large number of wrinkl... ...as the ba...

PASTRYCOOK & C... and ... ...R'S GUI...

For Hotels, Restaurants, ... in general, ad...
Use. By R. WELLS, Aut...hor of "Th... Bread and Biscuit
cloth . . . .

"We cannot speak too highly of this really excellent work. In these our readers cannot do better than purchase this book."—*Bakers' Times.*

ORNAMENTAL CONFECTIONERY.

A Guide for Bakers, Confectioners and Pastrycooks; in... Modern Recipes, and Remarks on Decorative and Colour... Original Designs. By ROBERT WELLS. Second Edition.

"A valuable work, practical, and should be in the hands of every... The illustrative designs are alone worth treble the amount charged for the... *Times.*

THE MODERN FLOUR CONFECTIONER, ...
AND RETAIL.

Containing a large Collection of Recipes for Cheap Cakes, ... remarks on the Ingredients Used in their Manufacture. ... Author of "The Bread and Biscuit Baker," &c. Crown 8...

"The work is of a decidedly practical character, and in every recipe reg... working."—*North British Daily...*

RUBBER HAND STAMPS

And the Manipulation of Rubber. A Practical Treatise on ... Indiarubber Hand Stamps, Small Articles of Indiarubber... Special Inks, Cements, and Allied Subjects. By T. O'Co... Ph.D. With numerous Illustrations. Square 8vo, cloth ...

HANDYBOOKS FOR HANDICRAFTS.

BY PAUL N. HASLUCK.

Editor of "Work" (New Series), Author of "Lathe Work," "Milling Machines," &c.
Crown 8vo, 144 pp., price 1s. each.

These HANDYBOOKS *have been written to supply information for* WORKMEN, STUDENTS, *and* AMATEURS *in the several Handicrafts, on the actual* PRACTICE *of the* WORKSHOP, *and are intended to convey in plain language* TECHNICAL KNOWLEDGE *of the several* CRAFTS. *In describing the processes employed, and the manipulation of material, workshop terms are used; workshop practice is fully explained; and the text is freely illustrated with drawings of modern tools, appliances, and processes.*

THE METAL TURNER'S HANDYBOOK.

A Practical Manual for Workers at the Foot-Lathe. With over 100 Illustrations 1/0

"The book will be of service alike to the amateur and the artisan turner. It displays thorough knowledge of the subject."—*Scotsman.*

THE WOOD TURNER'S HANDYBOOK.

A Practical Manual for Workers at the Lathe. With over 100 Illustrations. 1/0

"We recommend the book to young turners and amateurs. A multitude of workmen have hitherto sought in vain for a manual of this special industry."—*Mechanical World.*

THE WATCH JOBBER'S HANDYBOOK.

A Practical Manual on Cleaning, Repairing, and Adjusting. With upwards of 100 Illustrations 1/0

"We strongly advise all young persons connected with the watch trade to acquire and study this inexpensive work."—*Clerkenwell Chronicle.*

THE PATTERN MAKER'S HANDYBOOK.

A Practical Manual on the Construction of Patterns for Founders. With upwards of 100 Illustrations 1/0

"A most valuable, if not indispensable manual for the pattern maker."—*Knowledge.*

THE MECHANIC'S WORKSHOP HANDYBOOK.

A Practical Manual on Mechanical Manipulation, embracing Information on various Handicraft Processes. With Useful Notes and Miscellaneo Memoranda. Comprising about 200 Subjects 1/

"A very clever and useful book, which should be found in every workshop; and it shoul ainly find a place in all technical schools."—*Saturday Review.*

IE MODEL ENGINEER'S HANDYBOOK.

A Practical Manual on the Construction of Model Steam Engines. With upwards of 100 Illustrations 1/0

"Mr. Hasluck has produced a very good little book."—*Builder.*

IE CLOCK JOBBER'S HANDYBOOK.

A Practical Manual on Cleaning, Repairing, and Adjusting. With upwards of 100 Illustrations 1/0

"It is of inestimable service to those commencing the trade."—*Coventry Standard.*

THE CABINET MAKER'S HANDYBOOK.

A Practical Manual on the Tools, Materials, Appliances, and Processes employed in Cabinet Work. With upwards of 100 Illustrations . . 1/0

"Mr. Hasluck's thorough-going little Handybook is amongst the most practical guides we have seen for beginners in cabinet-work."—*Saturday Review.*

THE WOODWORKER'S HANDYBOOK OF MANUAL INSTRUCTION.

Embracing Information on the Tools, Materials, Appliances and Processes Employed in Woodworking. With 104 Illustrations. 1/0

OPINIONS OF THE PRESS.

"Written by a man who knows, not only how work ought to be done, but how to do it, and how to convey his knowledge to others."—*Engineering.*

"Mr. Hasluck writes admirably, and gives complete instructions."—*Engineer.*

"Mr. Hasluck combines the experience of a practical teacher with the manipulative skill and scientific knowledge of processes of the trained mechanician, and the manuals are marvels of what can be produced at a popular price."—*Schoolmaster.*

"Helpful to workmen of all ages and degrees of experience."—*Daily Chronicle*

"Practical, sensible, and remarkably cheap."—*Journal of Education.*

"Concise, clear, and practical."—*Saturday Review.*